

AD-A049 036

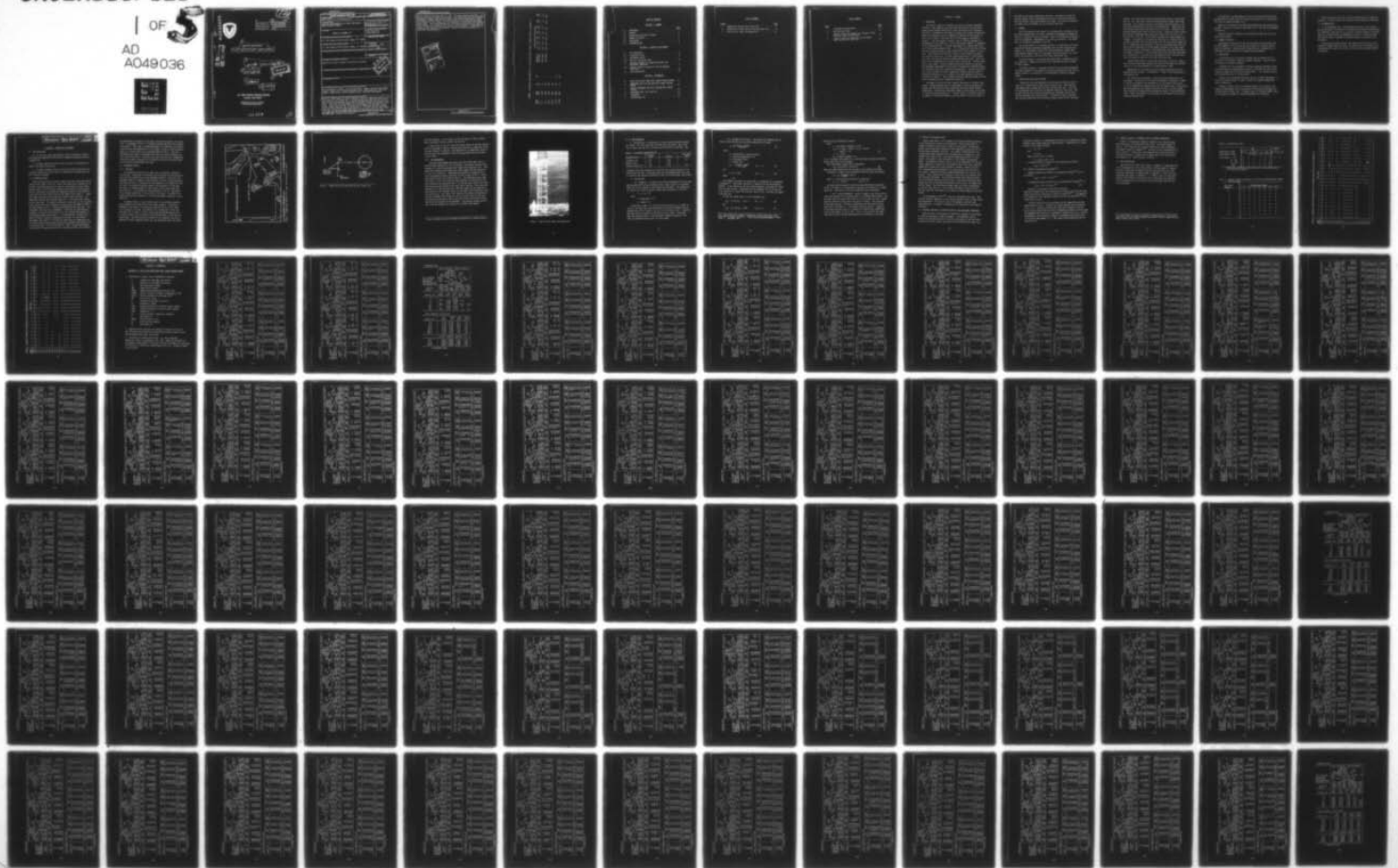
ARMY DUGWAY PROVING GROUND UTAH
TURBULENCE MEASUREMENTS ON A FORTY-EIGHT METER TOWER IN DESERT --ETC(U)
OCT 77 A W WALDRON

F/G 4/2

UNCLASSIFIED

NL

1 OF 5
AD
A049036



1000000

1 OF 5

AD

A049036



AD A 049036



AD No.
 DDC FILE COPY

AD •

RDTE Project No. 1T162111AH71A5

TECOM Project No. 2-CO-403-000-054

DPG Document No. M615A

6
TURBULENCE MEASUREMENTS
ON A FORTY-EIGHT METER TOWER IN DESERT TERRAIN.

9
DATA REPORT. 14 Feb - 8 Apr 77

BY

10
ALBERT W. WALDRON

11
OCT 1977

DDC
JAN 23 1978
RESOLVED
F

12
488p.

U.S. ARMY DUGWAY PROVING GROUND
Dugway, Utah 84022

APPROVED FOR PUBLIC RELEASE:
DISTRIBUTION UNLIMITED

118 150

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

| REPORT DOCUMENTATION PAGE | | READ INSTRUCTIONS BEFORE COMPLETING FORM |
|---|-----------------------|---|
| 1. REPORT NUMBER TECOM Project No. 2-CO-403-000-054 | 2. GOVT ACCESSION NO. | 3. RECIPIENT'S CATALOG NUMBER |
| 4. TITLE (and Subtitle) TURBULENCE MEASUREMENTS ON A FORTY-EIGHT METER TOWER IN DESERT TERRAIN | | 5. TYPE OF REPORT & PERIOD COVERED Data Report, February 14 - April 8, 1977 |
| 7. AUTHOR(s) ALBERT W. WALDRON, JR. | | 6. PERFORMING ORG. REPORT NUMBER |
| 9. PERFORMING ORGANIZATION NAME AND ADDRESS U.S. Army Dugway Proving Ground, Dugway, UT 84022 | | 8. CONTRACT OR GRANT NUMBER(s) RDTE Project No. 1T162111AH71-A5 |
| 11. CONTROLLING OFFICE NAME AND ADDRESS U.S. Army Dugway Proving Ground, Dugway, UT 84022 | | 10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS |
| 14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) | | 12. REPORT DATE October 1977 |
| | | 13. NUMBER OF PAGES 441 |
| | | 15. SECURITY CLASS. (of this report) |
| 16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited. | | 15a. DECLASSIFICATION/DOWNGRADING SCHEDULE |
| 17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report) | | |
| 18. SUPPLEMENTARY NOTES | | |
| 19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Bulk Richardson's number, critical Richardson's number, mixing height, Monin-Obukhov length scale, planetary boundary layer, rawinsonde data, similarity theory, steady-state, surface boundary layer, turbulence measurements. | | |
| 20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This is a data report for which turbulence, wind and temperature profiles were collected on a 48 m tower for 10 minute periods every data collection hour. Net radiation measurements were made and averaged for half hour periods every hour. Salt Lake City rawinsondes were collected at 0500 and 1700 hours local time. Dugway West Vertical Grid morning rawinsondes and afternoon 10 gram pilot balloon soundings were collected daily. The tower and net radiometer data were collected at Dugway West Vertical Grid every successful data collection hour of the day between 0900 Monday and 1500 Friday for an 8 week | | |

DD FORM 1 JAN 73 1473

EDITION OF 1 NOV 65 IS OBSOLETE

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

period, February 14 through April 8, 1977. All tower data were smoothed. Both observed and smoothed data are reproduced. Calculation of stability parameters; Richardson's number, Monin-Obukhov length scale and bulk Richardson's number are prepared for four layers. Friction velocity is calculated for the lowest three layers. Power law exponents are calculated for wind speed and turbulence. Approximately 50 percent of the data are associated with 8 m wind speeds of 3 m/s or more and are suitable for classical profile analysis. Known universal methods of data analysis are presented. Pasquill stability categories for these data are tabulated.

| | |
|---------------------------------|---|
| ACCESSION for | |
| NTIS | White Section <input checked="" type="checkbox"/> |
| DDC | Buff Section <input type="checkbox"/> |
| UNANNOUNCED | |
| JUSTIFICATION | |
| BY | |
| DISTRIBUTION/AVAILABILITY CODES | |
| Dist. | SPECIAL |
| A 23 C.F. | |

ERRATA: Turbulence Measurements on a Forty-eight Meter Tower in Desert Terrain, Appendix A

| Page | Time | <u>A</u> | <u>B</u> | Height, m SIGA (DEG) | Least Squares Fitted Data | | | | | | |
|-------|------|----------|----------|-------------------------|---------------------------|----------|----------|----------|-----------|-----------|-----------|
| | | | | | <u>1</u> | <u>2</u> | <u>4</u> | <u>8</u> | <u>16</u> | <u>32</u> | <u>48</u> |
| A-5 | 1600 | -.13 | - | SIGA (DEG) | 9.5 | 8.7 | 7.9 | 7.2 | 6.6 | 6.0 | 5.7 |
| A-5 | 1700 | -.22 | - | SIGA (DEG) | 8.0 | 6.8 | 5.9 | 5.0 | 4.3 | 3.7 | 3.4 |
| A-5 | 1800 | -.03 | - | SIGA (DEG) | 22.9 | 22.5 | 22.1 | 21.7 | 21.3 | 20.9 | 20.7 |
| A-28 | 1200 | -.08 | - | | | | | | | | |
| A-29 | 1300 | -.06 | - | | | | | | | | |
| A-101 | 0800 | -.61 | -.72 | | | | | | | | |
| A-106 | 0100 | -.37 | -.25 | | | | | | | | |

TABLE OF CONTENTS

SECTION 1. SUMMARY

| | <u>Page</u> |
|---|-------------|
| 1.1 BACKGROUND. | 1 |
| 1.2 PURPOSE | 2 |
| 1.3 DESCRIPTION AND SCOPE OF REPORT | 2 |
| 1.4 SUMMARY OF RESULTS | 4 |
| 1.5 CONCLUSIONS | 4 |
| 1.6 RECOMMENDATIONS | 5 |

SECTION 2. DETAILS OF THE REPORT

| | |
|---|----|
| 2.1 TEST OBJECTIVES | 6 |
| 2.2 LITERATURE REVIEW | 6 |
| 2.3 EXPERIMENT DETAILS | 7 |
| 2.4 DEPTH OF THE MIXING LAYER | 16 |
| 2.5 UNIVERSAL METHODS OF ESTIMATING VERTICAL AND HORIZONTAL TURBULENCE | 16 |
| 2.6 PASQUILL STABILITY CATEGORIES FOR THE OBSERVED TOWER DATA | 18 |
| 2.7 DATA PRESENTATION | 18 |

SECTION 3. APPENDICES

| | |
|---|-----|
| A. FORTY-EIGHT METER TOWER DATA, DUGWAY PROVING GROUND . | A-1 |
| B. RAWINSONDE AND PILOT BALLOON DATA, DUGWAY PROVING GROUND | B-1 |
| C. SPECIAL RAWINSONDE AND PILOT BALLOON DATA, DUGWAY PROVING | C-1 |
| D. RAWINSONDE DATA, SALT LAKE CITY | D-1 |
| E. REFERENCES | E-1 |
| F. DISTRIBUTION LIST | F-1 |

LIST OF FIGURES

| <u>Figure</u> | | <u>Page</u> |
|---------------|--|-------------|
| 1. | Dugway West Vertical 48 m Tower Site | 9 |
| 2. | Ground Plan of West Vertical Grid 48m Tower Site . . . | 10 |
| 3. | West Vertical Tower Instrumentation. | 12 |

LIST OF TABLES

| <u>Table</u> | | <u>Page</u> |
|--------------|---|-------------|
| 1. | Instrument Characteristics. | 13 |
| 2. | Net Radiation Index | 19 |
| 3. | Pasquill Stability Category as a Function of Net Radiation Index and Wind Speed. | 19 |
| 4. | Pasquill Stability Categories for the Dugway West Vertical 48 m Tower Site | 20 |

SECTION 1. SUMMARY

1.1 BACKGROUND

The Pasquill stability categories are used to estimate atmospheric diffusion. The categories are associated with vertical and horizontal aerosol cloud standard deviations at 100 m and their rate of change beyond 100 m. Estimates of the Pasquill category can be made from measured values of turbulence, vertical temperature gradient and wind speed; or, time of day, season, cloud cover and 10 m wind speed as presented by Turner⁽¹⁾. The last method is popular since it requires equipment for measurement of wind speed only. Use of this method, however, is dependent on site characteristics. A further requirement is a steady-state condition in the surface boundary layer. First inspection of the data indicates that this condition tends to occur only with 10 m wind speeds of 3 m/s or more. There have been few studies of what to expect when wind speeds at 10 m are less than 3 m/s. At times steady-state occurs for wind speeds less than 3 m/s and the Pasquill category method can be used. Also, the basis of site dependence has not been clearly spelled out. Surface roughness is one control. Surface albedo and moisture content are two more. Net radiometer measurements can be used to estimate the integrated effects of insolation, radiation, reflection and absorption. Vertical turbulence (σ_E) can be related to vertical temperature gradient and wind speed^(2,3). Horizontal turbulence (σ_A) is related to the same parameters plus depth of the mixing layer⁽⁴⁾. Net radiometer and wind speed measurements can be used to estimate vertical temperature gradient⁽⁵⁾.

The depth of the mixing layer controls the extent of vertical cloud growth. National Weather Service rawinsondes are used to estimate this height from the 0500 MST morning rawinsonde and the predicted maximum temperature. The afternoon rawinsonde, taken 12 hours later, can be used to verify the morning prediction. A recent study⁽⁴⁾ of daytime values of σ_A showed a relationship between σ_A and the depth of the mixing layer as

indicated by the lowest temperature inversion. The extent to which the National Weather Service rawinsondes can be used to describe conditions over the adjacent countryside remains to be seen. This would be important for Dugway since rawinsondes are not routinely taken here.

1.2 PURPOSE

The first purpose of this report is to present data collected at Dugway Proving Ground which will make it possible to determine the degree to which it is practical to use the Turner⁽¹⁾ basis of estimating the Pasquill stability categories. Measurements of σ_A and σ_E are precise. The Turner basis of estimating turbulence is less so.

The second purpose is to present the data in a form which facilitates comparisons between turbulence measurements and the other measured parameters; i.e., Richardson's number (Ri), bulk Richardson's number (BU), Monin-Obukhov length scale (L), wind speed, friction velocity (u_*), solar angle, net radiation, cloud cover and mixing layer depth (h_m).

The third purpose is to present data which makes a comparative study of h_m possible. Dugway and Salt Lake City rawinsonde data are included for that purpose.

The fourth purpose is to present data which can be used to determine the minimum amount of data needed to accurately estimate diffusion and the degree to which it is practical to use the Pasquill stability category method.

1.3 DESCRIPTION AND SCOPE OF REPORT

Turbulence, wind and temperature profiles were collected on a 48 m tower for 10 minute periods every data collection hour. Net radiation measurements were averaged for half hour periods every hour. Salt Lake City rawinsondes were collected for 0500 and 1700 hours local time. Dugway West Vertical Grid morning rawinsondes and afternoon 10 gram pilot balloon soundings were collected daily. There were 37 data collection days on which tower data were collected to make a total of 578 10-minute

periods. The eight week collection period started February 14 and ended April 8, 1977. Data were collected from 0900 Monday through 1500 Friday each week. Due to power failures and instrument system malfunction, the 578 periods represent 69.5 percent of the desired data. Dugway West Vertical morning rawinsondes were taken 35 of the 37 days. Afternoon pilot balloon soundings were taken 36 of the 37 days. Additional special Dugway West Vertical rawinsondes were taken every three hours on part of four days and all of one day. Pilot balloon soundings were taken between rawinsondes. The purpose of collecting the three hourly rawinsonde data was to make it possible to follow the change of mixing layer depth through the day. An additional eight afternoon or evening rawinsondes were taken and can be used to determine the actual Dugway afternoon mixing layer depth. After March second, a shortage of army meteorology team rawinsonde operators made it impractical to collect both morning and afternoon rawinsondes on a routine basis. Salt Lake City rawinsonde data were collected twice daily (at 0500 and 1700) for all 37 data collection days.

Surface observations of cloud cover and height, visibility, temperature, dew point and present weather were taken at the Dugway Army weather station, 21.5 km east-southeast of the West Vertical Tower.

Methodology for relating the various measured parameters has been demonstrated by Panofsky⁽⁴⁾ and Waldron⁽⁵⁾. Some of that methodology will be presented here.

All tower data are smoothed. Both observed and smoothed data are reproduced. Calculation of the stability parameters; Richardson's number, L , and BU are prepared from smoothed data for the lowest three layers, Ri is also prepared from observed data for the highest layer. Occasionally, when wind speeds do not increase with height to 48 m, the above numbers are calculated from observed data through the height of the maximum wind speed. Power law exponents are calculated for wind speed and turbulence using the smoothed data.

A comparison of h_m measurements at Salt Lake airport and at the Dugway West Vertical tower site will indicate the possibility of substituting Salt Lake for Dugway estimates of h_m .

Methods of calculating turbulence from dimensionless derived data are reviewed. The best of these are applicable to all sites and are designated as universal.

Pasquill stability categories for the observed tower data are calculated and tabulated.

1.4 SUMMARY OF RESULTS

Approximately 50 percent of the data collected were associated with 8 m wind speeds of 3 m/s or more and are suitable for classical profile analysis techniques. Eight percent of these data are incomplete due to the effect of precipitation on the temperature measurements.

1.5 CONCLUSIONS

A preliminary scan of the data indicates that 50 percent of it is suitable for the Pasquill stability category treatment. Light-wind data will require a different treatment.

Presentation of the parameters from which expected turbulence values can be derived was straightforward except for times when the positive Richardson's number was too large to be meaningful. It is possible that BU can be substituted for Ri in these cases.

Precise use of rawinsonde data may require a different technique; i.e., use of slow-rise balloons, in order to obtain the required temperature profile resolution.

Analysis of these data will determine whether or not simpler, less expensive measurements can be substituted for turbulence measurements at the West Vertical tower site. It appears that, for low wind speeds, there is no adequate substitute for direct measurements of turbulence.

The collection of cloud cover and net radiation data was completely successful. Further analysis will determine the usefulness of these data.

1.6 RECOMMENDATIONS

It is recommended that a straightforward analysis of the suitable data be performed in an effort to see whether the universal formulae apply. For nighttime σ_E data and for all σ_A data, it may be necessary to develop empirical relations which are dependent on the site. Light wind speed data require special treatment to determine whether any pattern can be discovered.

The observed afternoon mixing layer depth at Salt Lake City can be compared to Dugway wind-aloft data. The possibility of estimating σ_A at the West Vertical tower with the help of this mixing layer depth should be examined.

SECTION 2. DETAILS OF THE REPORT

2.1 TEST OBJECTIVES

- a. To initiate a data base which will make it possible to relate wind speed and temperature profile data to measured turbulence values at a desert site.
- b. To obtain data which can be used as a basis of estimating the depth of the local mixing layer.
- c. To obtain combined cloud cover and net radiation data which can be used to evaluate the Turner basis of determining the appropriate Pasquill stability category.

2.2 LITERATURE REVIEW

Most of the past data collection reports for other sites have concentrated on the lowest 16 to 32 m. Few of the reports have included all of the data considered necessary for analysis of turbulence in the surface boundary layer. One of the most complete reports which included observations of turbulence, wind speed and temperature profiles, net radiation, cloud cover and rawin reports was the 1957 Great Plains report⁽⁶⁾. Rawin wind speed and direction were measured to 2000 m every two hours. No temperature profiles were measured above 16 m. The mixing layer concept was not considered. The measured turbulence values were not very accurate. A more recent effort was conducted in Kansas during the summer of 1968⁽⁷⁾. The tower height was 32 m. Turbulence measurements were excellent. The instruments used were sonic anemometers. There were no rawinsonde measurements, no surface observations and no net radiation measurements in the published Kansas data report⁽⁷⁾. An interpretation of these data in terms of Pasquill stability categories can be seen in a DPG report⁽⁵⁾. The Wangara data report⁽⁸⁾ included 16 m tower wind and temperature profile data, surface observations and Funk net radiometer measurements, but no turbulence data. A 1971 White Sands⁽⁹⁾ report included measurements on nine poles of temperature profiles, wind speed profiles and turbulence.

No measurements were made of cloud cover, mixing layer depth or net radiation. In September 1973⁽¹⁰⁾, 11 daytime collection periods were conducted in Minnesota. These data included measurements of turbulence, wind speed, wind direction and temperature on a 32 m tower, as well as similar measurements on a balloon cable up to a maximum height of 1219 m. Slow-rise rawinsondes were taken to supplement the other data and to determine the top of the mixing layer. The skies were clear and there was a temperature inversion on every rawinsonde run to indicate the top of the mixing layer. No net-radiation measurements were taken.

2.3 EXPERIMENT DETAILS

2.3.1 The Site

The Dugway West Vertical 48 m tower site is located in relatively flat terrain. Variations of the desert area elevations are less than 40 m. This flat area extends 50 km in the northwest quadrant. Nine km to the southwest there is a mountain ridge oriented in a north to south direction and rising to 2131 m. Nineteen km to the southeast is a ridge which rises to 1700 m. An extensive mountain range to the northeast is 19 km away and rises to a maximum height of 2100 m along a 64 km north-south line (see Figure 1). The elevation of the tower base is 1311 m. Grey Molly is the primary vegetation in the vicinity of the tower. Grey Molly is a desert shrub having a height of 7 to 30 cm and spaced at one-half to one m intervals.

In summary there is a 5 km uniform fetch in the northwest quadrant and a minimum 9 km uniform fetch in the other quadrants. Forty-one m southwest of the tower is an electronic satellite which is 2.4 m wide, 2.7 m long and 2.4 m high. See Figure 2 for a ground plan of the site. The tower site as shown in Figure 1 passes the micrometeorological test of uniform terrain in all directions to a distance equal to 100 times the tower height. The ADAS electronic satellite is an exception and can be expected to affect roughness height (z_0) and turbulence values for winds

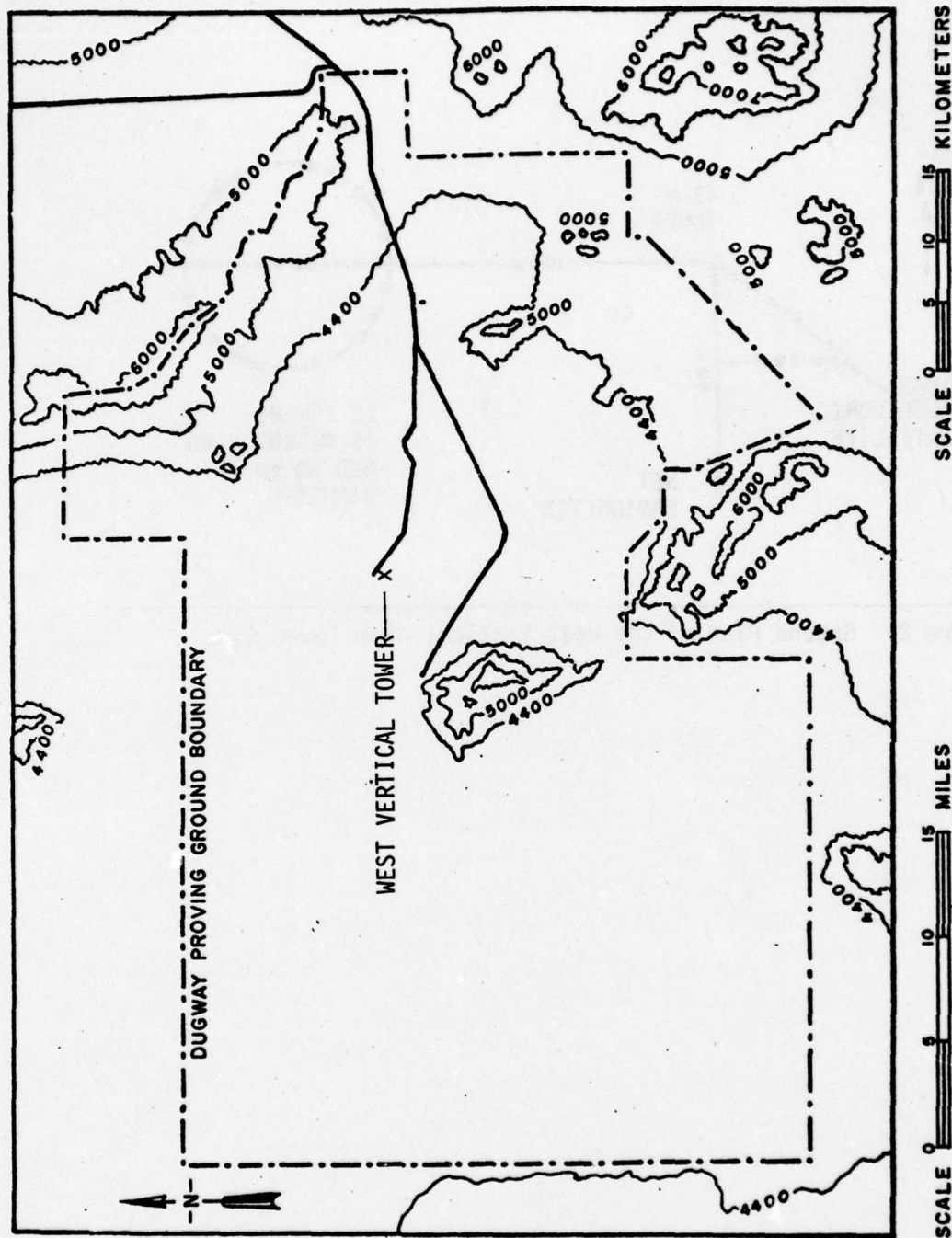


Figure 1. Dugway West Vertical 48 m Tower Site (Elevations in feet)

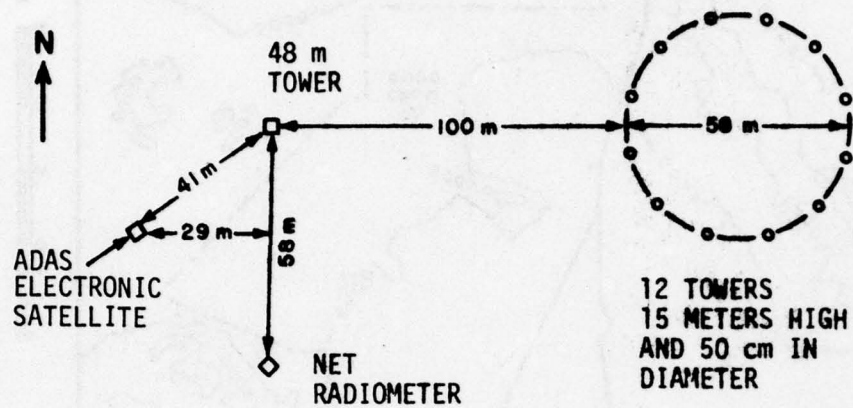


Figure 2. Ground Plan of the West Vertical 48 m Tower Site

from the southwest. The 12 towers to the east shown in Figure 2 should have a negligible effect on winds from the east.

A description of the Salt Lake City airport where the National Weather Service rawinsonde is taken is omitted here since only a comparison of mixing layer heights is involved. The comparability of Dugway West Vertical and Salt Lake City estimates of the mixing layer depth will be examined in this report.

2.3.2 Instrumentation

Turbulence measurements were made with four Climet model 014-47 or 014-48 bivanes mounted at 8, 16, 32 and 48 m. Horizontal turbulence measurements at 2 and 4 m were made with Climet 014-6 direction vanes. Wind speeds were measured with Climet cups, model number 014-102, mounted at 2, 4, 8, 16, 32 and 48 m. Temperature was measured by aspirated 015-3 Climet thermistors having an accuracy of plus or minus 0.15° C. Instrument characteristics are listed in Table 1. The instrument tower dimensions were 1.2 m by 1.8 m with the long dimension on a north-south line. The instrument arms projected east 2.1 m from the south side of the tower. Wind speed cups were placed at the outer end of the arm. Wind vanes were mounted 0.61 m from the outer end. Aspirator tubes for the thermistors were mounted on the northeast corner of the tower with the aspirator opening facing north. See Figure 3 for details of the tower instrumentation. The net radiometer¹ was placed on a one m post 58 m south of the tower. The data were collected on tape at the site, using the Climet Miniature Data Acquisition System CI-150 (MINIDAS). The tape was changed manually once a day and prepared for reduction by a UNIVAC 1108 computer.

¹A Gier and Dunkle type net radiometer manufactured by Teledyne Geotech.

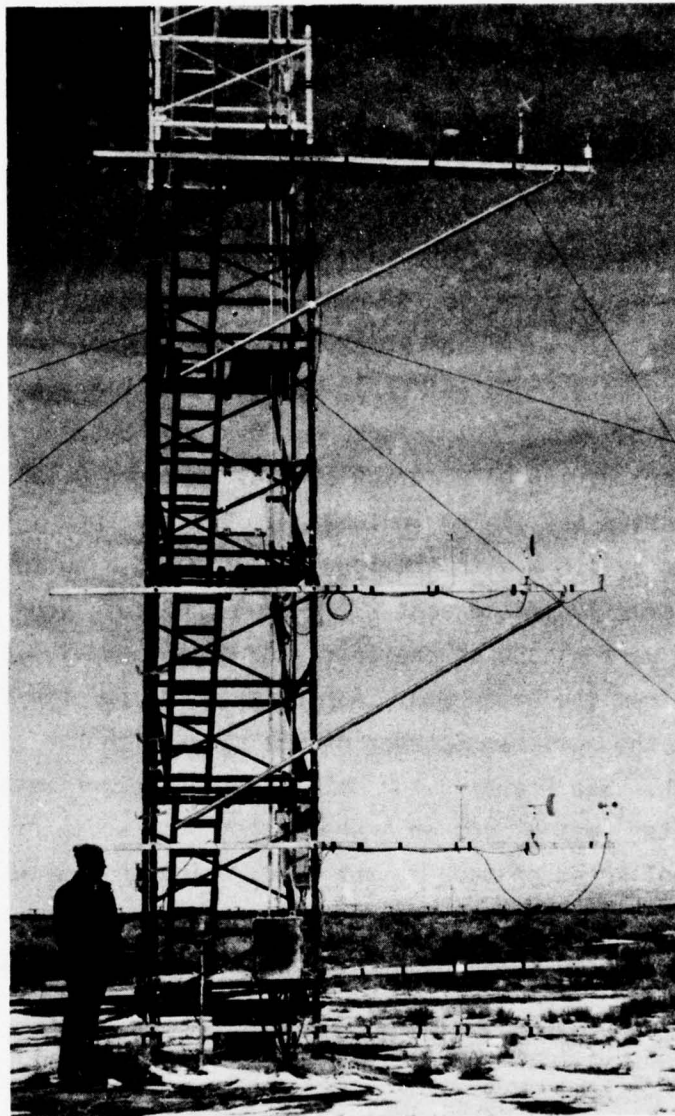


Figure 3. West Vertical Tower Instrumentation

2.3.3 Data Reduction

a. Observed Data. Bivane data at 4 and 8 m were collected 10 times per second. All other data were collected once per second. Data reduction of tower data was for a 10 minute period starting at the hour. Net

Table 1. Instrument Characteristics

| Characteristics | Direction Vane | Bivane | Wind Speed Cups |
|----------------------|----------------|--------|-----------------|
| Threshold, m/s | 0.33 | 0.33 | 0.27 |
| Damping ratio | 0.4 | 0.55 | |
| Distance Constant, m | 1.00 | 0.95 | 1.52 |

radiometer data were averaged for a one-half hour period centered at five minutes past the hour. Ten-minute means and instantaneous data were used to calculate the standard deviations of vertical and horizontal vane angles.

b. Derived Data.

(i) Smoothing. In order to facilitate interpretation of the data, observed data profiles were smoothed using a least squares fit technique. Power law fit was assumed for wind speed and turbulence. The temperature (T) profile was fitted by using a second order polynomial of the form:

$$T = a + bz + cz^2$$

where

T = temperature in °C

z = height in m

Richardson's number, $1/L$, BU and friction velocity (u_* or USTAR, as listed in the data) were then calculated by the profile method using the smoothed data for the layers 2 to 8 m, 4 to 16 m and 8 to 32 m. Observed data were used to calculate Ri for the 32 to 48 m layer. Calculated power law exponents were: A for horizontal standard deviation, B for vertical standard deviation and P for wind speed.

(ii) Mathematical Formulae. The theoretical formulae used to calculate derived data by the profile method are as follows:

$$Ri = \frac{g}{T} \frac{(\partial T / \partial z + 0.01)}{(\partial u / \partial z)^2} \quad (2)$$

where

g = acceleration of gravity in m/s^2

T = absolute temperature in $^{\circ}K$

u = wind speed in m/s

z = height in m

$$Ri = \frac{0.74\zeta(1 - 15\zeta)^{1/2}}{(1 - 9\zeta)^{1/2}} \quad \text{for } \zeta < 0 \quad (3)$$

and

$$\zeta = Ri + 15Ri^2 \quad \text{for } \zeta > 0 \quad (4)$$

where

$$\zeta = z/L$$

The unstable case basis of calculating ζ in equation (3) is presented by Businger⁽³⁾. The stable case basis in equation (4) was formulated by Hansen². It was decided to use this formula because it provides for values of Ri as large as one. Turbulence does not disappear for the larger positive values of Ri , hence the classical cutoff at $Ri = 0.23$ does not appear to be realistic.

To test for steady state, u_* was calculated from:

$$\frac{u}{u_*} = \frac{1}{k} (\ln(z/z_0) - \psi_1(\zeta)) \quad \text{for } \zeta < 0 \quad (5)$$

and

$$\frac{u}{u_*} = \frac{1}{k} (\ln(z/z_0) + 15Ri) \quad \text{for } Ri > 0 \quad (6)$$

²U.S. Army Electronics Command, Atmospheric Science Laboratory, White Sands Missile Range, New Mexico. The Critical Richardson Number, Hansen, Frank V., September 1977.

Equation (6) was developed by Hansen .

where

k = von Karman's constant = 0.35.

$$\psi_1(\zeta) = 2 \ln((1+x)/2) + \ln((1+x^2)/2) - 2 \tan^{-1} x + \pi/2 \quad (7)$$

$$x = (1 - 15\zeta)^{1/4}$$

z_0 = surface roughness in m

If u_* is constant with height (i.e., not more than 20 percent variation), steady state state can be assumed.

Bulk Richardson's number (BU) is defined by:

$$BU = (g/T)(\partial T/\partial z + 0.01)z^2/u^2 \quad (8)$$

Where the symbol definitions are the same as for equation (2) above.

Richardson's number can be calculated from BU by using the formula:

$$Ri = BU \frac{\ln(z/z_0) - \psi_1(\zeta)}{\phi(Ri)}$$

where ψ_1 is the same as in equation (7) above and

$$\phi = (1 - 18 Ri)^{-1/4} \quad \text{for } Ri < 0$$

No relationship between Ri and BU has been determined for positive values of Ri when z/L is determined by equation (4) or when Ri is greater than 0.20. These data can be used to determine the relationship.

(iii) Surface Roughness. Surface roughness (z_0) can be calculated from equation (5) by assuming that u_* is constant with height. This was done using the layers from 2 to 8 m, 4 to 16 m and 8 to 32 m. Roughness was solved for using each of two pairs of layers. The resulting values were averaged. Thirty-two temperature and wind speed profiles were used to calculate z_0 . The average value was 0.039 m. Inspection of the data indicates that u_* is essentially constant with height when the 8 m wind speed is 3 m/s or more. This is also true for the nighttime data for which the new Hansen method of calculating u_* was used.

2.4 DEPTH OF THE MIXING LAYER

Mixing layer depth is not included in the data presentation because of the controversial nature of that quantity. Mixing layer depth is needed to determine the vertical extent of cloud growth. The National Weather Service publishes forecasts of the afternoon h_m every day for all United States rawinsonde locations. This height is calculated by forecasting the maximum temperature and following the dry adiabat on a rawinsonde chart (skew-T) until the observed temperature profile is intersected. The height of the intersection is the forecast mixing layer depth. The observed afternoon value of h_m can be determined ⁽⁴⁾ from the lowest temperature inversion or the height at which the virtual potential temperature increase with height reaches a maximum. Twenty Salt Lake City rawinsonde morning estimates of h_m were prepared from the data in this report. Observed afternoon maximum temperatures were used for this purpose. These forecasts were compared to the value of h_m obtained from the afternoon rawinsonde. The correlation between the morning estimate and the afternoon observed value was 0.66. Seven Dugway afternoon rawinsondes were used to determine the observed value of h_m at the Dugway West Vertical tower. The correlation between these values and corresponding h_m for Salt Lake was 0.76. This at least indicates a possibility that the Salt Lake City rawinsondes can be used to estimate Dugway mixing layer heights.

In the Minnesota trials ⁽¹⁰⁾, slow-rise rawinsondes were used. Temperature inversions appeared in the planetary boundary layer on every afternoon observation. This was not true of the Dugway or the Salt Lake rawinsonde data. A change in technique may be indicated for the required resolution.

2.5 UNIVERSAL METHODS OF ESTIMATING VERTICAL AND HORIZONTAL TURBULENCE

There has been a large amount of theoretical research on the problem of relating turbulence to other parameters. The parameters usually treated are standard deviation of vertical wind speed (σ_w) and the standard deviation of the lateral variation of the horizontal wind speed (σ_v).

A universal formula is a dimensionless one which can be applied to surface boundary layer steady-state data taken anyplace. Interpretation in terms of data in this report follows:

$$\sigma_w = \sigma_E u$$

and

$$\sigma_v = \sigma_A u$$

where σ_E and σ_A are in radians

u , σ_w and σ_v are in m/s

A proposed universal formula for the unstable case follows:

$$\sigma_w/u_* = 2(z/-L)^{1/3}$$

This formula is presented by Businger⁽³⁾.

Another unstable case formula is presented by Panofsky⁽⁴⁾ and is as follows:

$$\sigma_w/u_* = 1.3(1 + 3 z/-L)^{1/3}$$

A proposed universal formula for σ_v as presented by Panofsky⁽⁴⁾ is:

$$\sigma_v/u_* = (12 + 0.5 h_m/-L)^{1/3} \quad (9)$$

where h_m is the height of the first inversion.

Equation (9) agrees well with observations at several sites and with wind tunnel data during a near-neutral stability condition⁽¹¹⁾. This equation also agrees well with laboratory studies by Willis and Deardorff⁽¹²⁾ for large values of $h_m/-L$.

Friction velocity can be calculated from the temperature and wind speed profiles as can L . Equation (3) above indicates the relationship of z/L to Ri . Equation (8) shows the relationship between Ri and BU . BU can be calculated from the vertical temperature gradient and wind speed. The parameter most difficult to determine in equation (9) is h_m . Precise measurement of this quantity by means of rawinsonde might cost as much as the direct measurement of σ_A . New remote sensing techniques may reduce that cost.

2.6 PASQUILL STABILITY CATEGORIES FOR THE OBSERVED TOWER DATA

Turner ⁽¹⁾ formulated a method of choosing a net radiation index from cloud cover, solar angle and time of day. His results appear in Table 2. This index and the 10 m wind speed can be used to determine the Pasquill stability category ⁽¹³⁾. The basis of this determination is seen in Table 3. Cloud cover, wind speed and solar angle were used to classify the Pasquill category for the Dugway data using the measured wind speed at 8 m. Results appear in Table 4.

2.7 DATA PRESENTATION

The West Vertical tower data ³ appear in Appendix A, Dugway West Vertical rawinsondes and pilot balloon winds aloft data appear in Appendix B, special three-hourly rawinsonde and pilot balloon data plus a few afternoon rawinsondes for Dugway appear in Appendix C. Salt Lake City rawinsonde data appear in Appendix D. In order to assist in the determination of the depth of the mixing layer, mixing ratio and potential virtual temperature were calculated for both the Dugway and Salt Lake City rawinsondes.

³A limited number of copies of graphical representation of the observed tower data are available from Meteorology Branch, MT-DA-M, Dugway Proving Ground, Dugway, Utah 84022.

Table 2. Net Radiation Index

| Cloud Cover (1/10) Cloud Height (100m) Solar Angle: < 15° 15 - 35° 35 - 60° > 60° | Day | | | | | | Night ^a | |
|--|-------|-------|-------|------|------|------|--------------------|--------|
| | 0 - 5 | 6 - 9 | | | 10 | | 0 - 4 | 5 - 10 |
| | | < 21 | 21-49 | > 49 | < 21 | > 21 | | |
| | 1 | 1 | 1 | 1 | 0 | 1 | -2 | -1 |
| | 2 | 1 | 1 | 2 | 0 | 1 | | |
| | 3 | 1 | 2 | 3 | 0 | 2 | | |
| | 4 | 2 | 3 | 4 | 0 | 3 | | |

^a Nighttime is defined as the period from 1 hour before sunset to 1 hour after sunrise.

Table 3. Pasquill Stability Category as a Function of Net Radiation Index and Wind Speed

| Wind Speed (m/sec) | Net Radiation Index | | | | | | |
|-----------------------|---------------------|---|---|---|---|----|----|
| | 4 | 3 | 2 | 1 | 0 | -1 | -2 |
| < 1 | A | A | B | C | D | F | F |
| 1 | A | B | B | C | D | F | F |
| 2 | A | B | C | D | D | E | F |
| 3 | B | B | C | D | D | E | F |
| 4 | B | C | C | D | D | D | E |
| 5 | C | C | D | D | D | D | E |
| 6 | C | C | D | D | D | D | D |
| > 6 | C | D | D | D | D | D | D |

Table 4. Pasquill Stability Categories for the Dugway West Vertical 48 m Tower Site

| DATE Month/ Day | TIME (HR) | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------|-----------|-----|---|---|---|---|---|---|---|---|----|----|----|----|----|-----|-----|----|----|----|----|----|----|----|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| 2/14 | F | F | F | F | F | F | F | F | | C | C | D | C | D | D | D | D | D | D | F | F | F | F | F |
| 2/15 | | | | | | | | | | | | | | | | | | | | | | | | |
| 2/16 | | | | | | | | | | C | C | C | B | A | B | MSG | C | D | F | E | F | F | E | E |
| 2/17 | F | E-F | E | F | F | F | F | E | E | B | B | B | B | B | B | C | C | C | E | E | F | F | F | F |
| 2/18 | F | F | F | F | F | F | F | F | F | B | B | B | B | B | B | C | | | | | | | | |
| 2/24 | | | | | | | | | | | | | | D | D | D | D | D | F | E | F | E | E | E |
| 2/25 | D | D | D | D | E | F | F | E | E | D | D | D | D | D | D | D | | | | | | | | |
| 2/28 | | | | | | | | | | D | D | D | D | D | D | D | D | D | D | D | E | D | F | F |
| 3/1 | F | E | E | D | D | D | D | D | E | D | D | D | D | D | C | C | C | D | C | E | D | D | D | D |
| 3/2 | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 3/3 | E | F | F | F | F | E | E | E | E | C | D | C | C | C | B | B | D | D | D | F | F | D | D | E |
| 3/4 | D | E | D | D | E | E | D | D | D | D | D | D | D | D | D | D | | | | | | | | |
| 3/7 | | | | | | | | | | D | D | D | D | D | C | D | D | D | D | E | E | E | D | D |
| 3/8 | D | D | D | D | D | D | D | D | D | D | D | C | C | B | B | C | C | C | F | E | F | | | |
| 3/9 | | | | | | | | | | D | D | D | C | D | D | D | D | D | | | | | | |
| 3/10 | | | | | | | | | | | | D | D | | | | | | | | | | | |
| 3/11 | | | | | | | | | | D | D | D | C | D | D | D | | | | | | | | |
| 3/14 | | | | | | | | | | | D | C | C | B | B | C | MSG | C | F | F | F | F | F | E |
| 3/15 | E | E | E | E | E | E | E | E | C | B | C | C | C | C | C | C | D | D | D | F | E | E | E | D |

Table 4. Pasquill Stability Categories for the Dugway West Vertical 48 m Tower Site (Continued)

| DATE Month/ Day | TIME (HR) | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------|-----------|---|---|---|---|---|---|---|---|---|----|----|----|----|-----|----|----|----|----|----|----|----|----|----|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| 3/16 | E | D | F | F | F | F | F | E | D | D | C | B | C | C | C | C | C | D | C | E | E | D | E | E |
| 3/17 | E | E | E | F | E | D | D | E | D | D | D | D | | | | | | | | | | | | |
| 3/18 | | | | | | | | | | | C | B | D | D | B | C | | | | | | | | |
| 3/21 | | | | | | | | | | B | B | A | B | B | B | B | C | C | F | F | F | F | F | F |
| 3/22 | E | F | F | F | E | F | E | F | C | C | C | C | B | B | MSG | A | | | | | | | | |
| 3/23 | | | | | | | | | | | C | B | D | D | D | D | D | D | D | D | D | D | D | D |
| 3/24 | D | D | D | D | D | | | | | | | | | | | | | | | | | | | |
| 3/25 | | | | | | | | | | D | D | C | C | B | C | D | | | | | | | | |
| 3/28 | | | | | | | | | D | D | D | D | D | D | D | D | D | D | D | D | D | D | E | F |
| 3/29 | E | E | E | D | | | | | | | | | | | | | | | | | | | | |
| 3/30 | | | | | | | | | | | B | B | B | B | D | D | D | D | D | D | D | D | E | E |
| 3/31 | E | E | F | F | D | D | E | F | C | C | B | B | B | B | C | C | C | C | D | F | F | F | F | E |
| 4/1 | E | F | E | E | E | D | F | E | D | D | D | D | D | D | D | D | | | | | | | | |
| 4/4 | | | | | | | | | | D | C | C | D | B | B | B | C | C | F | F | F | F | F | F |
| 4/5 | F | F | F | F | F | F | E | F | C | C | B | B | B | B | B | B | C | C | D | F | F | F | F | F |
| 4/6 | F | F | F | F | F | F | F | F | B | B | B | B | B | C | B | B | C | C | C | F | F | F | E | F |
| 4/7 | E | F | F | E | E | F | E | F | C | C | B | B | B | B | B | C | D | D | D | E | E | D | E | D |
| 4/8 | D | E | D | E | F | F | D | D | D | D | D | D | D | D | D | D | D | D | | | | | | |

SECTION 3. APPENDICES

APPENDIX A. FORTY EIGHT-METER TOWER DATA, DUGWAY PROVING GROUND

1. Definitions of symbols used in Appendices A through C.

| | |
|--------|---|
| A | Exponent for SIGA power law profile |
| B | Exponent for SIGE power law profile |
| BU | Bulk Richardson's number |
| DPG | Dugway Proving Ground |
| DPGWV | Dugway Proving Ground West Vertical Grid |
| DTH/DZ | Vertical gradient of potential temperature, $^{\circ}\text{C}/\text{m}$ |
| DU/DZ | Vertical gradient of wind speed, sec^{-1} |
| MR | Mixing ratio, gm/kg |
| P | Exponent for WS power law profile |
| Ri | Richardson's Number |
| SIGA | Standard deviation of horizontal angle, degrees |
| SIGE | Standard deviation of vertical angle, degrees |
| TEMP | Temperature, $^{\circ}\text{C}$ |
| TH | Virtual potential temperature, degrees K |
| U | Wind speed, m/s |
| USTAR | Friction velocity, m/s |
| WD | Wind direction, degrees |
| WS | Wind speed, m/s |

2. Complete 24-hour data were not obtained for each day of the 40-day collection period because of precipitation effects, power failures and instrumentation system malfunction.

3. Explanation of observed data table: (a) After Richardson Number the figures in parentheses, (4M), (8M), (16M) and (39.192M) are the geometric mean heights of the layer for which the number was calculated. (b) The minus (-) before CLD (TENTHS) means thin; i.e., -8 means 8 tenths of thin clouds.

OBSERVED DATA

| DATE 14/02/77 TIME 09:00:00 : DATE 14/02/77 TIME 10:00:00 : DATE 14/02/77 TIME 11:00:00 : | | | | | | | | | | | | | | | |
|---|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------|------|------|------|-----|-----|
| WEATHER | WEATHER | WEATHER | WEATHER | WEATHER | WEATHER | WEATHER | WEATHER | WEATHER | WEATHER | | | | | | |
| TEMP DEG C | TEMP DEG C | TEMP DEG C | TEMP DEG C | TEMP DEG C | TEMP DEG C | TEMP DEG C | TEMP DEG C | TEMP DEG C | TEMP DEG C | | | | | | |
| DEW POINT DEG C | DEW POINT DEG C | DEW POINT DEG C | DEW POINT DEG C | DEW POINT DEG C | DEW POINT DEG C | DEW POINT DEG C | DEW POINT DEG C | DEW POINT DEG C | DEW POINT DEG C | | | | | | |
| VISIBILITY (MI) | VISIBILITY (MI) | VISIBILITY (MI) | VISIBILITY (MI) | VISIBILITY (MI) | VISIBILITY (MI) | VISIBILITY (MI) | VISIBILITY (MI) | VISIBILITY (MI) | VISIBILITY (MI) | | | | | | |
| CLD (TENTHS) | CLD (TENTHS) | CLD (TENTHS) | CLD (TENTHS) | CLD (TENTHS) | CLD (TENTHS) | CLD (TENTHS) | CLD (TENTHS) | CLD (TENTHS) | CLD (TENTHS) | | | | | | |
| CLD HT (M) | CLD HT (M) | CLD HT (M) | CLD HT (M) | CLD HT (M) | CLD HT (M) | CLD HT (M) | CLD HT (M) | CLD HT (M) | CLD HT (M) | | | | | | |
| EXPONENTS | EXPONENTS | EXPONENTS | EXPONENTS | EXPONENTS | EXPONENTS | EXPONENTS | EXPONENTS | EXPONENTS | EXPONENTS | | | | | | |
| NET RADIATION | NET RADIATION | NET RADIATION | NET RADIATION | NET RADIATION | NET RADIATION | NET RADIATION | NET RADIATION | NET RADIATION | NET RADIATION | | | | | | |
| RICHARDSON NO. | RICHARDSON NO. | RICHARDSON NO. | RICHARDSON NO. | RICHARDSON NO. | RICHARDSON NO. | RICHARDSON NO. | RICHARDSON NO. | RICHARDSON NO. | RICHARDSON NO. | | | | | | |
| (1/L)*10 | (1/L)*10 | (1/L)*10 | (1/L)*10 | (1/L)*10 | (1/L)*10 | (1/L)*10 | (1/L)*10 | (1/L)*10 | (1/L)*10 | | | | | | |
| USTAR | USTAR | USTAR | USTAR | USTAR | USTAR | USTAR | USTAR | USTAR | USTAR | | | | | | |
| WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE | | | | | | |
| (DEG) | (M/S) | (C) | (DEG) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | | | | | | |
| 1. | 320. | 1.05 | 1.97 | 8.5 | 315. | 1.50 | 4.63 | 14.7 | 332. | 6.48 | 6.31 | 10.0 | | | |
| 2. | | 1.31 | 1.93 | | | 1.85 | 4.52 | | | 4.44 | 6.14 | | | | |
| 4. | | 1.33 | 1.86 | 6.7 | 6.3 | 311. | 1.92 | 4.40 | 12.3 | 7.9 | 328. | 4.60 | 5.84 | 9.0 | 5.4 |
| 8. | | 1.31 | 1.75 | 6.1 | 7.2 | 303. | 2.11 | 4.24 | 11.0 | 7.7 | 321. | 4.97 | 5.62 | 8.0 | 5.6 |
| 16. | | 1.51 | 1.66 | 4.8 | 5.5 | 306. | 2.24 | 4.02 | 12.4 | 8.5 | | 5.04 | 5.32 | | |
| 32. | | 1.77 | 1.74 | 5.4 | 3.4 | 314. | 2.44 | 3.87 | 9.8 | 10.1 | 326. | 5.50 | 5.14 | 6.9 | 6.2 |
| 48. | | | | | | | | | | | | | | | |

LEAST SQUARES FITTED DATA

| DATE 14/02/77 TIME 09:00:00 : DATE 14/02/77 TIME 10:00:00 : DATE 14/02/77 TIME 11:00:00 : | | | | | | | | | | | | |
|---|--|--|--|--|--|--|--|--|--|--|--|--|
| WEATHER | | | | | | | | | | | | |
| TEMP DEG C | | | | | | | | | | | | |
| DEW POINT DEG C | | | | | | | | | | | | |
| VISIBILITY (MI) | | | | | | | | | | | | |
| CLD (TENTHS) | | | | | | | | | | | | |
| CLD HT (M) | | | | | | | | | | | | |
| EXPONENTS | | | | | | | | | | | | |
| NET RADIATION | | | | | | | | | | | | |
| RICHARDSON NO. | | | | | | | | | | | | |
| (1/L)*10 | | | | | | | | | | | | |
| USTAR | | | | | | | | | | | | |
| WD | | | | | | | | | | | | |
| WS | | | | | | | | | | | | |
| TEMP | | | | | | | | | | | | |
| SIGA | | | | | | | | | | | | |
| SIGE | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (M/S) | | | | | | | | | | | | |
| (C) | | | | | | | | | | | | |
| (DEG) | | | | | | | | | | | | |
| | | | | | | | | | | | | |

* OBSERVED DATA

OBSERVED DATA

```

: DATE 14/02/77 TIME 15:00:00 :
: WEATHER :
: TEMP DEG C 10.5 :
: DEW POINT DEG C -3.3 :
: VISIBILITY (MI) 70 :
CLD (TENTHS) : LOW MID HI -4 TOTL 4:
CLD HT (M) : LOW MID HI 6097 :
EXPONENTS : A= -.12 B= .18 P= .10 :
NET RADIATION : 21.35 MW/CM2 :
RICHARDSON NO.: (4M) -.14 (8M) -.41 (16M) -.86 :
: (39.192M) (OBSERVED DATA):
(1/L)*10 : (4M) -.40 (8M) -.55 (16M) -.58:
USTAR : (4M).3937 (8M).3897 (16M).3871:

```

```

: WD WS TEMP SIGA SIGE :
HEIGHT (M) : (DEG) (M/S) (C) (DEG) (DEG):
1. : 10.24 :
2. : 356. 4.30 10.03 10.9 :
4. : 4.85 9.69 :
8. : 353. 5.28 9.43 10.6 6.4:
16. : 343. 5.65 9.20 9.9 6.7:
32. : 5.90 8.92 :
48. : 350. 5.94 8.65 7.2 8.7:

```

LEAST SQUARES FITTED DATA

```

: WS TEMP SIGA SIGE :
HEIGHT (M) : (M/S) (C) (DEG) (DEG) :
1.0 : 4.16 10.04 12.7 4.3 :
2.0 : 4.46 9.97 11.7 4.8 :
4.0 : 4.78 9.84 10.7 5.5 :
8.0 : 5.13 9.61 9.9 6.2 :
16.0 : 5.50 9.22 9.1 7.0 :
32.0 : 5.90 8.76 8.3 7.9 :
48.0 : 6.14 8.71 7.9 8.5 :
: DU/DZ DTH/DZ BU*100 RI :
4.0 : .1114 -.0500 -.121 -.01 :
8.0 : .0597 -.0418 -.352 -.20 :
16.0 : .0320 -.0255 -.749 -.69 :
39.2* : .0025 -.0069 -1.048 -.54 :

```

* OBSERVED DATA

OBSERVED DATA

| | DATE | 14/02/77 | TIME | 16:00:00 | DATE | 14/02/77 | TIME | 17:00:00 | DATE | 14/02/77 | TIME | 18:00:00 |
|-----------------|------|---|------|---|------|---|------|--------------|------|-----------------|------|--------------|
| CLD (TENTHS) | : | WEATHER | : | : | : | WEATHER | : | : | : | WEATHER | : | : |
| CLD HT (M) | : | TEMP DEG C | : | 10.5 | : | TEMP DEG C | : | 10.0 | : | TEMP DEG C | : | 7.8 |
| EXPONENTS | : | DEW POINT DEG C | : | -4.4 | : | DEW POINT DEG C | : | -4.4 | : | DEW POINT DEG C | : | -6.1 |
| | : | VISIBILITY (MI) | : | 85 | : | VISIBILITY (MI) | : | 85 | : | VISIBILITY (MI) | : | 85 |
| | : | LOW | : | HI | : | LOW | : | HI | : | LOW | : | HI |
| | : | MID | : | 4 | : | MID | : | 4 | : | MID | : | 4 |
| | : | 7622 | : | HI | : | 7622 | : | HI | : | 7622 | : | HI |
| | : | A = | : | .08 | : | A = | : | .03 | : | A = | : | .05 |
| | : | B = | : | .17 | : | B = | : | -.20 | : | B = | : | .40 |
| | : | P = | : | .11 | : | P = | : | .12 | : | P = | : | .22 |
| NET RADIATION : | : | | : | 10.81 MW/CM2 | : | | : | -1.74 MW/CM2 | : | | : | -9.00 MW/CM2 |
| RICHARDSON NO. | : | (4M) - .05 (8M) - .14 (16M) - .30 | : | (4M) - .00 (8M) - .02 (16M) - .07 | : | (4M) - .27 (8M) - .65 (16M) - 1.13 | : | | : | | : | |
| | : | (39.192M) - 4.13 (OBSERVED DATA) : | : | (39.192M) - .00 (OBSERVED DATA) : | : | (39.192M) - .57 (OBSERVED DATA) : | : | | : | | : | |
| (1/L)*10 | : | (4M) - .15 (8M) - .20 (16M) - .21 | : | (4M) - .01 (8M) - .03 (16M) - .05 | : | (4M) - 3.34 (8M) - 8.75 (16M) - 12.60 | : | | : | | : | |
| USTAR | : | (4M) - .4571 (8M) - .4449 (16M) - .4399 | : | (4M) - .3675 (8M) - .3511 (16M) - .3468 | : | (4M) - .0952 (8M) - .0639 (16M) - .0489 | : | | : | | : | |

| HEIGHT (M) | : (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|---------|----------|----------|------------|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|
| 1. | : | | 10.10 | | | | | 9.05 | | | | | 6.07 | | |
| 2. | : | 1. | 10.30 | 8.7 | | 356. | 4.29 | 9.08 | 7.2 | | 330. | 1.83 | 6.54 | 22.6 | |
| 4. | : | 5.84 | 9.77 | | | | 4.87 | 9.01 | | | | 2.52 | 7.04 | | |
| 8. | : | 358. | 9.56 | 7.4 | 4.9: | 354. | 5.46 | 8.92 | 4.8 | 4.4: | 329. | 2.96 | 7.50 | 21.8 | 4.2: |
| 16. | : | 348. | 9.43 | 6.4 | 5.1: | 346. | 5.90 | 8.90 | 4.0 | 3.6: | 323. | 3.32 | 7.89 | 21.0 | 5.9: |
| 32. | : | 7. | 9.14 | | | 353. | 6.28 | 8.65 | | | | 3.65 | 7.99 | | |
| 48. | : | 357. | 8.89 | 5.8 | 6.6: | 355. | 6.29 | 8.42 | 3.6 | 3.0: | 341. | 3.93 | 7.91 | 20.9 | 8.7: |

LEAST SQUARES FITTED DATA

| HEIGHT (M) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : |
|--------------|------------|------------|--------------|--------------|------------|------------|--------------|--------------|------------|------------|--------------|--------------|
| 1.0 : | 4.98 : | 9.99 : | 7.4 : | 3.3 : | 4.09 : | 9.06 : | 5.9 : | 6.6 : | 1.73 : | 6.46 : | 20.9 : | 1.9 : |
| 2.0 : | 5.38 : | 9.94 : | 7.9 : | 3.8 : | 4.45 : | 9.04 : | 6.1 : | 5.7 : | 2.02 : | 6.58 : | 21.7 : | 2.5 : |
| 4.0 : | 5.82 : | 9.86 : | 8.3 : | 4.2 : | 4.84 : | 9.02 : | 6.2 : | 5.0 : | 2.36 : | 6.80 : | 22.5 : | 3.2 : |
| 8.0 : | 6.29 : | 9.70 : | 8.8 : | 4.8 : | 5.27 : | 8.97 : | 6.3 : | 4.3 : | 2.75 : | 7.20 : | 23.4 : | 4.3 : |
| 16.0 : | 6.79 : | 9.42 : | 9.3 : | 5.3 : | 5.73 : | 8.87 : | 6.4 : | 3.7 : | 3.21 : | 7.81 : | 24.2 : | 5.7 : |
| 32.0 : | 7.34 : | 9.05 : | 9.8 : | 6.0 : | 6.24 : | 8.65 : | 6.6 : | 3.3 : | 3.75 : | 8.30 : | 25.2 : | 7.5 : |
| 48.0 : | 7.68 : | 8.93 : | 10.1 : | 6.4 : | 6.56 : | 8.42 : | 6.6 : | 3.0 : | 4.10 : | 7.79 : | 25.7 : | 8.9 : |
| : | DJ/DZ : | DTM/DZ : | BU*100 : | RI : | NU/DZ : | DTM/DZ : | BU*100 : | RI : | DU/DZ : | OTM/DZ : | BU*100 : | RI : |

| | 4.0 | 8.0 | 16.0 | 39.2* | | | | | | | |
|---|-------|--------|-------|-------|-------|--------|-------|------|-------|-------|-------|
| 1 | .1505 | -.0312 | -.051 | -.02 | .1368 | -.0022 | -.005 | -.00 | .1219 | .1135 | 1.142 |
| 2 | .0813 | -.0264 | -.148 | -.07 | .0744 | -.0025 | -.020 | -.02 | .0712 | .0942 | 2.780 |
| 3 | .0439 | -.0169 | -.325 | -.30 | .0405 | -.0032 | -.087 | -.07 | .0415 | .0557 | 4.813 |
| 4 | .0069 | -.0056 | -.549 | -.48 | .0006 | -.0044 | -.592 | -.21 | .0175 | .0050 | 1.878 |

CASERVED DATA

OBSERVED DATA

| | DATE 14/02/77 | TIME 19:00:00 | DATE 14/02/77 | TIME 20:00:00 | DATE 14/02/77 | TIME 21:00:00 | |
|----------------|-----------------|---------------------|-----------------|---------------------|-----------------|---------------|-------------|
| | WEATHER | | WEATHER | | WEATHER | | |
| | TEMP DEG C | 4.4 | TEMP DEG C | -1.1 | TEMP DEG C | 0.0 | |
| | DEW POINT DEG C | -6.7 | DEW POINT DEG C | -8.9 | DEW POINT DEG C | -8.9 | |
| | VISIBILITY (MI) | 50 | VISIBILITY (MI) | 20 | VISIBILITY (MI) | 20 | |
| CLD (TENTHS) | LOW | MID | HI | TOTL | LOW | MID | HI |
| CLD HT (M) | LOW | MID | HI | TOTL | LOW | MID | HI |
| EXPONENTS | A = -.06 | B = .42 | P = .27 | A = -.23 | B = .24 | P = .44 | |
| NET RADIATION | | | | | | | |
| RICHARDSON NO. | (4M) | .71 (8M) | 1.58 (16M) | 2.36 | (4M) | .42 (8M) | .75 (16M) |
| | (39.192M) | .15 (OBSERVED DATA) | (39.192M) | .30 (OBSERVED DATA) | (39.192M) | .99 (8M) | 2.56 (16M) |
| (1/L)*10 | (4M) | 20.77 (8M) | 48.98 (16M) | 53.91 | (4M) | 7.69 (8M) | 11.55 (16M) |
| USTAR | (4M) | .0428 (8M) | .0273 (16M) | .0231 | (4M) | .0503 (8M) | .0450 (16M) |
| | (4M) | .0379 (8M) | .0194 (16M) | .0117 | (4M) | .0379 (8M) | .0194 (16M) |
| HEIGHT (M) | WD | WS | TEMP (C) | SIGA (DEG) | WD | WS | TEMP (C) |
| | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (C) |
| 1. | 317. | 1.27 | 4.23 | 9.3 | 281. | 1.53 | -63 |
| 2. | | 2.12 | 6.20 | | | 2.38 | .22 |
| 4. | 322. | 2.71 | 7.33 | 5.5 | | 2.90 | 2.27 |
| 8. | 320. | 2.84 | 7.79 | 4.7 | 1.6 | 2.84 | 3.53 |
| 16. | 324. | 2.95 | 7.93 | 7.0 | 2.0 | 2.73 | 4.05 |
| 32. | 336. | 3.58 | 7.88 | 7.6 | 2.7 | 3.08. | 4.54 |
| 48. | | | | | 3.3 | 3.51 | 5.80 |
| | | | | | | | 17.3 |
| | | | | | | | 2.8 |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WD | WS | TEMP (C) | SIGA (DEG) | SIGA (DEG) | WD | WS | TEMP (C) | SIGA (DEG) | SIGA (DEG) |
|------------|-------|-------|----------|------------|------------|-------|--------|----------|------------|------------|
| 1.0 | 1.28 | 4.14 | 7.7 | .3 | 11.1 | 1.60 | 1.60 | .51 | 13.2 | .6 |
| 2.0 | 1.55 | 4.46 | 7.4 | .4 | 9.5 | 1.84 | 1.84 | .79 | 13.9 | .8 |
| 4.0 | 1.97 | 5.05 | 7.1 | .6 | 8.1 | 2.11 | 2.11 | 1.32 | 14.6 | 1.1 |
| 8.0 | 2.26 | 6.12 | 6.8 | .8 | 6.9 | 2.42 | 2.42 | 2.29 | 15.3 | 1.5 |
| 16.0 | 2.73 | 7.74 | 6.5 | 1.1 | 5.9 | 2.78 | 2.78 | 3.88 | 16.0 | 2.0 |
| 32.0 | 3.31 | 8.95 | 6.3 | 1.4 | 5.0 | 3.19 | 3.19 | 5.60 | 16.8 | 2.7 |
| 48.0 | 3.69 | 7.47 | 6.1 | 1.7 | 4.6 | 3.45 | 3.45 | 5.39 | 17.3 | 3.2 |
| | DU/DZ | DT/DZ | BU*100 | RI | DU/DZ | DT/DZ | BU*100 | RI | | |
| 4.0 | .1130 | .2863 | 4.607 | .00 | .1628 | .3140 | 7.228 | .00 | .0971 | .2612 |
| 8.0 | .0720 | .2336 | 10.251 | .00 | .1105 | .2600 | 12.924 | .00 | .0557 | .2234 |
| 16.0 | .0435 | .1282 | 15.312 | .00 | .0750 | .1519 | 16.267 | .00 | .0319 | .1478 |
| 39.2* | .0394 | .0069 | 3.522 | .00 | .0381 | .0125 | 4.457 | .00 | .0488 | .0887 |
| | | | | | | | | | | 50.586 |

* OBSERVED DATA

[illegible][illegible]

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1.0 | .19 | -85 | 3.3 | 1.5 | 1.36 | -1.42 | 10.1 | .2 | 2.66 | -3.97 | 2.2 | .2 |
| 2.0 | .29 | -54 | 3.9 | 1.7 | 1.42 | -1.09 | 12.2 | .3 | 2.49 | -3.65 | 3.0 | .4 |
| 4.0 | .45 | .03 | 4.6 | 1.9 | 1.49 | -.47 | 14.6 | .7 | 2.33 | -3.04 | 4.1 | .9 |
| 8.0 | .69 | 1.07 | 5.5 | 2.0 | 1.56 | .65 | 17.6 | 1.6 | 2.17 | -1.89 | 5.6 | 1.9 |
| 16.0 | 1.07 | 2.70 | 6.4 | 2.2 | 1.63 | 2.47 | 21.1 | 3.6 | 2.03 | .06 | 7.7 | 3.9 |
| 32.0 | 1.64 | 4.16 | 7.6 | 2.5 | 1.70 | 4.34 | 25.4 | 8.0 | 1.90 | 2.56 | 10.6 | 8.2 |
| 48.0 | 2.12 | 3.19 | 8.4 | 2.6 | 1.75 | 3.85 | 28.3 | 12.7 | 1.82 | 3.21 | 12.8 | 12.7 |
| | DU/DZ | DTW/DZ | BU*100 | RI | DU/DZ | DTW/DZ | BU*100 | RI | DU/DZ | DTW/DZ | BU*100 | RI |
| 4.0 | .3668 | .2797 | 79.447 | .00 | .0222 | .3014 | 7.809 | .00 | -.0526 | .3042 | 3.266 | .00 |
| 8.0 | .0514 | .2326 | 110.945 | .00 | .0116 | .2554 | 24.107 | .00 | -.0246 | .2680 | 13.124 | .00 |
| 16.0 | .0396 | .1384 | 110.607 | .00 | .0061 | .1635 | 56.060 | .00 | -.0115 | .1955 | 43.545 | .00 |
| 39.2* | .0237 | .0375 | 57.096 | .00 | -.0238 | .0356 | 77.617 | .00 | -.0481 | .0938 | 182.590 | .00 |

A-7

[illegible]

| HEIGHT (M) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : |
|--------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|-----------------|
| 1.0 : | .36 | -5.17 | 36.2 | .2 | 1.06 | -4.64 | 7.7 | .2 | 1.55 | -5.73 | 10.1 | .0 |
| 2.0 : | .43 | -4.78 | 26.1 | .4 | .98 | -4.37 | 5.1 | .3 | 1.60 | -5.32 | 9.2 | .0 |
| 4.0 : | .51 | -4.02 | 18.8 | .8 | .91 | -3.84 | 3.3 | .6 | 1.65 | -4.54 | 8.3 | .1 |
| 8.0 : | .61 | -2.63 | 13.5 | 1.6 | .84 | -2.86 | 2.2 | 1.2 | 1.71 | -3.11 | 7.6 | .2 |
| 16.0 : | .73 | -.40 | 9.7 | 3.4 | .78 | -1.19 | 1.5 | 2.2 | 1.76 | -.78 | 6.9 | .5 |
| 32.0 : | .87 | 1.91 | 7.0 | 6.9 | .72 | .90 | 1.0 | 4.1 | 1.82 | 1.79 | 6.3 | 1.4 |
| 48.0 : | .97 | 1.34 | 5.8 | 10.4 | .69 | 1.37 | .8 | 5.9 | 1.86 | 1.57 | 6.0 | 2.5 |
| ----- | | | | | | | | | | | | |
| : | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI |
| ----- | | | | | | | | | | | | |
| 4.0 : | .0303 | .3675 | 81.168 | .00 | -.0230 | .2625 | 18.603 | .00 | .0179 | .3778 | 8.065 | .00 |
| 8.0 : | .0180 | .3114 | 192.490 | .00 | -.0107 | .2305 | 75.836 | .00 | .0093 | .3233 | 25.731 | .00 |
| 16.0 : | .0108 | .1991 | 343.458 | .00 | -.0049 | .1667 | 253.816 | .00 | .0048 | .2143 | 63.376 | .00 |
| 39.2* : | .0019 | .0056 | 76.815 | .00 | -.0275 | .0987 | 938.667 | .00 | -.0175 | .0681 | 112.247 | .00 |

A-8

OBSERVED DATA

| | | DATE 15/02/77 | | TIME 04:00:00 | | DATE 15/02/77 | | TIME 05:00:00 | | DATE 15/02/77 | | TIME 06:00:00 | | | | | | | | |
|----------------|--------------|-----------------|-----------------|-----------------|-------|-----------------|-----------|-----------------|-----------------|-----------------|-------|-----------------|-----------|--------|-----------------|-----------|-------|-----------------|------|------|
| | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | | | | | | | | | |
| | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | | | | | | | | | |
| | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | | | | | | | | | |
| | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | | | | | | | | | |
| CLD (TENTHS) | LOW | MID | HI | 4 | TOTL | 4 | LOW | MID | HI | TOTL | 0 | LOW | MID | HI | TOTL | 0 | | | | |
| CLD HT (M) | LOW | MID | HI | 7622 | LOW | MID | HI | 7622 | LOW | MID | HI | LOW | MID | HI | 7622 | LOW | | | | |
| EXPONENTS | A = | -0.14 | B = | 0.30 | P = | 0.24 | A = | -0.14 | B = | 0.30 | P = | 0.24 | A = | -0.14 | B = | 0.30 | | | | |
| NET RADIATION | -6.83 MW/CM2 | | | | | | | | | | | | | | | | | | | |
| RICHARDSON NO. | (4M) | 0.25 | (3M) | 0.64 | (16M) | 22.38 | (4M) | 1.44 | (8M) | 3.21 | (16M) | 6.18 | (4M) | 0.42 | (8M) | 1.01 | (16M) | 2.20 | | |
| (1/L)*10 | (39.192M) | 22.44 | (OBSERVED DATA) | (39.192M) | 0.53 | (OBSERVED DATA) | (39.192M) | 0.53 | (OBSERVED DATA) | (39.192M) | 0.53 | (OBSERVED DATA) | (39.192M) | 0.53 | (OBSERVED DATA) | (39.192M) | 0.53 | (OBSERVED DATA) | | |
| USTAR | (4M) | 2.88 | (8M) | 8.56 | (16M) | 0.0000 | (4M) | 81.02 | (8M) | 0.0000 | (16M) | 0.0000 | (4M) | 81.02 | (8M) | 0.0000 | (16M) | 0.0000 | | |
| | (4M) | 0.40 | (8M) | 0.32 | (16M) | 0.0000 | (4M) | 0.133 | (8M) | 0.0082 | (16M) | 0.0057 | (4M) | 0.0698 | (8M) | 0.0458 | (16M) | 0.0297 | | |
| HEIGHT (M) | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE |
| 1. | | | -7.30 | | | | | -7.40 | | | | | -7.83 | | | | | -7.83 | | |
| 2. | 101. | 0.72 | -7.22 | 19.9 | | 144. | 0.76 | -6.99 | 8.3 | | 87. | 1.67 | -7.72 | 7.6 | | | | -7.72 | 7.6 | |
| 4. | | 0.95 | -7.13 | | | | 1.13 | -6.44 | | | | 2.13 | -7.51 | | | | | -7.51 | | |
| 8. | 111. | 1.37 | -6.81 | 11.5 | 2.8 | 138. | 1.51 | -5.50 | 3.2 | 0.6 | 94. | 2.76 | -6.41 | 7.7 | 2.5 | | | -6.41 | 7.7 | 2.5 |
| 16. | 134. | 2.50 | -3.75 | 8.0 | 1.7 | 167. | 0.85 | -4.53 | 6.0 | 2.3 | 115. | 3.79 | -4.37 | 5.0 | 1.6 | | | -4.37 | 5.0 | 1.6 |
| 32. | 163. | 1.52 | 0.27 | 23.3 | 3.8 | 204. | 3.06 | -1.49 | 3.5 | 1.4 | 132. | 4.37 | -1.48 | 2.5 | 1.1 | | | -1.48 | 2.5 | 1.1 |
| 48. | 171. | 1.34 | 1.38 | 8.2 | 4.3 | | 2.19 | -0.95 | 3.9 | 2.0 | 121. | 3.95 | 0.19 | 3.4 | 1.0 | | | 0.19 | 3.4 | 1.0 |

LEAST SQUARES FITTED DATA

| | | DATE 15/02/77 | | TIME 04:00:00 | | DATE 15/02/77 | | TIME 05:00:00 | | DATE 15/02/77 | | TIME 06:00:00 | | | | | | | | | | | | | | |
|----------------|-----------|-----------------|-----------------|-----------------|-------|-----------------|-----------|-----------------|-----------------|-----------------|-------|-----------------|-----------|---------|-----------------|-----------|--------|-----------------|-----------|--------|-----------------|-----------|-------|-----------------|------|---|
| | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | | | | | | | | | | | | | | | |
| | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | | | | | | | | | | | | | | | |
| | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | | | | | | | | | | | | | | | |
| | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | | | | | | | | | | | | | | | |
| CLD (TENTHS) | LOW | MID | HI | 4 | TOTL | 4 | LOW | MID | HI | TOTL | 0 | LOW | MID | HI | TOTL | 0 | | | | | | | | | | |
| CLD HT (M) | LOW | MID | HI | 7622 | LOW | MID | HI | 7622 | LOW | MID | HI | LOW | MID | HI | 7622 | LOW | MID | HI | TOTL | 0 | | | | | | |
| EXPONENTS | A = | -0.14 | B = | 0.30 | P = | 0.24 | A = | -0.14 | B = | 0.30 | P = | 0.24 | A = | -0.14 | B = | 0.30 | P = | 0.24 | A = | -0.14 | B = | 0.30 | P = | 0.24 | | |
| NET RADIATION | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RICHARDSON NO. | (4M) | 0.25 | (3M) | 0.64 | (16M) | 22.38 | (4M) | 1.44 | (8M) | 3.21 | (16M) | 6.18 | (4M) | 0.42 | (8M) | 1.01 | (16M) | 2.20 | (4M) | 0.42 | (8M) | 1.01 | (16M) | 2.20 | | |
| (1/L)*10 | (39.192M) | 22.44 | (OBSERVED DATA) | (39.192M) | 0.53 | (OBSERVED DATA) | (39.192M) | 0.53 | (OBSERVED DATA) | (39.192M) | 0.53 | (OBSERVED DATA) | (39.192M) | 0.53 | (OBSERVED DATA) | (39.192M) | 0.53 | (OBSERVED DATA) | (39.192M) | 0.53 | (OBSERVED DATA) | (39.192M) | 0.53 | (OBSERVED DATA) | | |
| USTAR | (4M) | 2.88 | (8M) | 8.56 | (16M) | 0.0000 | (4M) | 81.02 | (8M) | 0.0000 | (16M) | 0.0000 | (4M) | 81.02 | (8M) | 0.0000 | (16M) | 0.0000 | (4M) | 81.02 | (8M) | 0.0000 | (16M) | 0.0000 | | |
| | (4M) | 0.40 | (8M) | 0.32 | (16M) | 0.0000 | (4M) | 0.133 | (8M) | 0.0082 | (16M) | 0.0057 | (4M) | 0.0698 | (8M) | 0.0458 | (16M) | 0.0297 | (4M) | 0.0698 | (8M) | 0.0458 | (16M) | 0.0297 | | |
| HEIGHT (M) | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE | |
| 1.0 | : | .74 | -7.86 | 18.7 | 1.4 | : | .62 | -7.30 | 8.0 | .3 | : | 1.43 | -8.06 | 11.3 | 7.4 | : | 1.43 | -8.06 | 11.3 | 7.4 | : | 1.43 | -8.06 | 11.3 | 7.4 | |
| 2.0 | : | .87 | -7.55 | 16.9 | 1.7 | : | .79 | -7.05 | 6.9 | .4 | : | 1.76 | -7.79 | 9.0 | 5.1 | : | 1.76 | -7.79 | 9.0 | 5.1 | : | 1.76 | -7.79 | 9.0 | 5.1 | |
| 4.0 | : | 1.03 | -6.94 | 15.3 | 2.1 | : | 1.00 | -6.56 | 6.0 | .6 | : | 2.18 | -7.26 | 7.1 | 3.5 | : | 2.18 | -7.26 | 7.1 | 3.5 | : | 2.18 | -7.26 | 7.1 | 3.5 | |
| 8.0 | : | 1.21 | -5.77 | 13.8 | 2.5 | : | 1.26 | -5.65 | 5.2 | .9 | : | 2.68 | -6.25 | 5.6 | 2.4 | : | 2.68 | -6.25 | 5.6 | 2.4 | : | 2.68 | -6.25 | 5.6 | 2.4 | |
| 16.0 | : | 1.42 | -3.68 | 12.5 | 3.1 | : | 1.60 | -4.06 | 4.5 | 1.2 | : | 3.31 | -4.43 | 4.5 | 1.7 | : | 3.31 | -4.43 | 4.5 | 1.7 | : | 3.31 | -4.43 | 4.5 | 1.7 | |
| 32.0 | : | 1.69 | -2.40 | 11.3 | 3.8 | : | 2.02 | -1.82 | 3.9 | 1.8 | : | 4.08 | -1.57 | 3.6 | 1.2 | : | 4.08 | -1.57 | 3.6 | 1.2 | : | 4.08 | -1.57 | 3.6 | 1.2 | |
| 48.0 | : | 1.85 | 1.64 | 10.7 | 4.3 | : | 2.32 | -.85 | 3.6 | 2.2 | : | 4.62 | .23 | 3.1 | .9 | : | 4.62 | .23 | 3.1 | .9 | : | 4.62 | .23 | 3.1 | .9 | |
| | | DU/DZ | | DTH/DZ | | DU/DZ | | DTH/DZ | | DU/DZ | | DTH/DZ | | DU/DZ | | DTH/DZ | | DU/DZ | | DTH/DZ | | DU/DZ | | DTH/DZ | | |
| | | RI | | RI | | RI | | RI | | RI | | RI | | RI | | RI | | RI | | RI | | RI | | RI | | |
| 4.0 | : | .0562 | .3055 | 17.065 | .00 | : | .0789 | .2435 | 14.427 | .00 | : | .1533 | .2664 | 3.33.19 | .00 | : | .1533 | .2664 | 3.33.19 | .00 | : | .1533 | .2664 | 3.33.19 | .00 | : |
| 8.0 | : | .0331 | .2816 | 45.168 | .00 | : | .0499 | .2189 | 32.272 | .00 | : | .0945 | .2459 | 8.024 | .00 | : | .0945 | .2459 | 8.024 | .00 | : | .0945 | .2459 | 8.024 | .00 | : |
| 16.0 | : | .0195 | .2337 | 107.292 | .00 | : | .0316 | .1695 | 62.060 | .00 | : | .0583 | .2049 | 17.459 | .00 | : | .0583 | .2049 | 17.459 | .00 | : | .0583 | .2049 | 17.459 | .00 | : |
| 39.2* | : | -.0113 | .0794 | 210.600 | .00 | : | -.0544 | .0438 | 33.998 | .00 | : | -.0262 | .1144 | 36.146 | .00 | : | -.0262 | .1144 | 36.146 | .00 | : | -.0262 | .1144 | 36.146 | .00 | : |

* OBSERVED DATA

OBSERVED DATA

| | DATE 15/02/77 | TIME 07:00:00 | DATE 15/02/77 | TIME 08:00:00 | DATE 15/02/77 | TIME 09:00:00 |
|-----------------|---------------|---------------|---------------|---------------|-----------------|---------------|
| WEATHER | | | | | | |
| TEMP DEG C | -7.8 | | -6.1 | | TEMP DEG C | -0.5 |
| DEW POINT DEG C | -13.3 | | -11.1 | | DEW POINT DEG C | -7.8 |
| VISIBILITY (MI) | | | | | VISIBILITY (MI) | |
| CLD (TENTHS) | | | | | | |
| CLD HT (M) | | | | | | |
| EXPONENTS | | | | | | |
| NET RADIATION | | | | | | |
| RICHARDSON NO. | | | | | | |
| (1/L)*10 | | | | | | |
| USTAR | | | | | | |

| | DATE 15/02/77 | TIME 07:00:00 | DATE 15/02/77 | TIME 08:00:00 | DATE 15/02/77 | TIME 09:00:00 |
|-----------------|---------------|---------------|---------------|---------------|-----------------|---------------|
| WEATHER | | | | | | |
| TEMP DEG C | -7.8 | | -6.1 | | TEMP DEG C | -0.5 |
| DEW POINT DEG C | -13.3 | | -11.1 | | DEW POINT DEG C | -7.8 |
| VISIBILITY (MI) | | | | | VISIBILITY (MI) | |
| CLD (TENTHS) | | | | | | |
| CLD HT (M) | | | | | | |
| EXPONENTS | | | | | | |
| NET RADIATION | | | | | | |
| RICHARDSON NO. | | | | | | |
| (1/L)*10 | | | | | | |
| USTAR | | | | | | |

| HEIGHT (M) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|
| 1. | | | | | | | | | | | | | | | |
| 2. | | | | | | | | | | | | | | | |
| 4. | | | | | | | | | | | | | | | |
| 8. | | | | | | | | | | | | | | | |
| 16. | | | | | | | | | | | | | | | |
| 32. | | | | | | | | | | | | | | | |
| 48. | | | | | | | | | | | | | | | |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|
| 1.0 | | | | | | | | | | | | | | | |
| 2.0 | | | | | | | | | | | | | | | |
| 4.0 | | | | | | | | | | | | | | | |
| 8.0 | | | | | | | | | | | | | | | |
| 16.0 | | | | | | | | | | | | | | | |
| 32.0 | | | | | | | | | | | | | | | |
| 48.0 | | | | | | | | | | | | | | | |

| | DU/DZ | OTH/DZ | BU*100 | RI | DU/DZ | OTH/DZ | BU*100 | RI | DU/DZ | OTH/DZ | BU*100 | RI |
|------|-------|--------|--------|----|-------|--------|--------|----|-------|--------|--------|----|
| 4.0 | | | | | | | | | | | | |
| 8.0 | | | | | | | | | | | | |
| 16.0 | | | | | | | | | | | | |
| 32.0 | | | | | | | | | | | | |
| 48.0 | | | | | | | | | | | | |

* OBSERVED DATA

OBSERVED DATA

: DATE 15/02/77 TIME 10:00:00 : DATE 15/02/77 TIME 11:00:00 : DATE 15/02/77 TIME 12:00:00 :
 : WEATHER : WEATHER : WEATHER :
 : TEMP DEG C : -2.8 : TEMP DEG C : 6.1 : TEMP DEG C : 10.0 :
 : DEW POINT DEG C : -7.8 : DEW POINT DEG C : -7.8 : DEW POINT DEG C : -5.5 :
 : VISIBILITY (MI) : : VISIBILITY (MI) : : VISIBILITY (MI) : :
 : LOW MID HI : 4 TOTL 4 : LOW MID HI : 4 TOTL 4 : LOW MID HI : 4 TOTL 4 :
 : 19.88 MW/CM2 : 27.49 MW/CM2 : 32.23 MW/CM2 :
 : A = -.29 B = .05 P = .11 : A = -.11 B = .18 P = .13 : A = -.09 B = .24 P = .10 :
 : RICHARDSON NO. : : RICHARDSON NO. : : RICHARDSON NO. : :
 : (1/L)*10 : : (1/L)*10 : : (1/L)*10 : :
 : USTAR : : USTAR : : USTAR : :

: WD WS TEMP SGA SGE : WD WS TEMP SGA SGE : WD WS TEMP SGA SGE :
 : (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) :
 : 1. : 4.86 : 4.86 : 10.34 :
 : 2. : 145. : 3.44 : 4.66 : 10.8 : 100. : 2.36 : 7.68 : 20.2 : 154. : 2.83 : 9.91 : 22.6 :
 : 4. : 138. : 4.00 : 4.31 : 7.9 : 98. : 2.66 : 7.50 : 18.1 : 147. : 3.11 : 9.69 : 20.7 :
 : 8. : 133. : 4.47 : 4.10 : 5.1 : 98. : 2.85 : 7.28 : 15.8 : 143. : 3.46 : 9.37 : 19.8 :
 : 16. : 136. : 4.72 : 3.77 : 5.6 : 103. : 3.06 : 7.14 : 15.2 : 145. : 3.67 : 9.01 : 19.7 :
 : 32. : 139. : 4.85 : 3.57 : 4.1 : 110. : 3.40 : 6.86 : 14.0 : 146. : 3.78 : 8.73 : 15.8 :
 : 48. : 139. : 4.98 : 3.38 : 4.1 : 110. : 3.59 : 6.64 : 14.0 : 146. : 3.91 : 8.54 : 15.8 :

LEAST SQUARES FITTED DATA

: WD WS TEMP SGA SGE : WD WS TEMP SGA SGE : WD WS TEMP SGA SGE :
 : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) :
 : 1.0 : 3.37 : 4.67 : 13.4 : 4.5 : 2.19 : 7.83 : 22.2 : 6.1 : 2.71 : 10.05 : 24.7 : 4.2 :
 : 2.0 : 3.63 : 4.60 : 11.0 : 4.7 : 2.39 : 7.77 : 20.5 : 7.0 : 2.91 : 9.97 : 23.2 : 4.9 :
 : 4.0 : 3.92 : 4.47 : 9.0 : 4.9 : 2.61 : 7.66 : 18.9 : 7.9 : 3.11 : 9.82 : 21.8 : 5.8 :
 : 8.0 : 4.23 : 4.23 : 7.4 : 5.1 : 2.85 : 7.46 : 17.5 : 9.0 : 3.34 : 9.53 : 20.5 : 6.9 :
 : 16.0 : 4.57 : 3.83 : 6.1 : 5.3 : 3.11 : 7.12 : 16.1 : 10.2 : 3.58 : 9.06 : 19.3 : 8.2 :
 : 32.0 : 4.93 : 3.40 : 5.0 : 5.5 : 3.40 : 6.73 : 14.9 : 11.6 : 3.83 : 8.55 : 18.1 : 9.7 :
 : 48.0 : 5.16 : 3.44 : 4.4 : 5.6 : 3.57 : 6.70 : 14.2 : 12.5 : 3.99 : 8.61 : 17.5 : 10.7 :
 : DU/DZ DTH/DZ RU*100 RI : DU/DZ DTH/DZ RU*100 RI : DU/DZ DTH/DZ RU*100 RI :
 : 4.0 : .0993 : -.0525 : -.193 : -.03 : .0767 : -.0420 : -.345 : -.12 : .0719 : -.0639 : -.365 : -.11 :
 : 8.0 : .0539 : -.0432 : -.544 : -.26 : .0419 : -.0349 : -.962 : -.69 : .0385 : -.0528 : -1.052 : -.62 :
 : 16.0 : .0291 : -.0245 : -1.063 : -1.03 : .0229 : -.0205 : -1.901 : -3.22 : .0206 : -.0307 : -2.133 : -3.20 :
 : 39.2* : .0081 : -.0019 : -.423 : -.50 : .0119 : -.0037 : -1.660 : -5.43 : .0081 : -.0019 : -.680 : -.99 :

* OBSERVED DATA

OBSERVED DATA

: DATE 16/02/77 TIME 09:16:00 : DATE 16/02/77 TIME 13:00:00 : DATE 16/02/77 TIME 11:00:00 :
 : WEATHER : WEATHER : WEATHER :
 : TEMP DEG C 0.6 : TEMP DEG C 3.9 : TEMP DEG C 6.7 :
 : DEW POINT DEG C -7.22 : DEW POINT DEG C -6.7 : DEW POINT DEG C -6.7 :
 : VISIBILITY (MI) 85 : VISIBILITY (MI) 85 : VISIBILITY (MI) 85 :
 : LOW MID HI 10 TOTL 10 :LOW MID HI 10 TOTL 10 :LOW MID HI 8 TOTL 8 :
 : A=-1.69 B=-1.22 P=-.18 : A=-.17 B=-.04 P=.05 : A=-.26 B=.10 P=.10 :
 : 11.23 MW/CM2 : 23.16 MW/CM2 : 29.72 MW/CM2 :
 NET RADIATION :
 RICHARDSON NO.: (4M)3.87 (8M) 26.0(16M)187.8 : (4M)-15.9 (8M)-52.2(16M)-13.6 : (4M) -.87 (8M)-2.53(16M)-5.28 :
 : (39.192M) : (OBSERVED DATA): (39.192M) : (OBSERVED DATA): (39.192M)-13.6 (OBSERVED DATA):
 (1/L)*10 : (4M) (8M) (16M) : (4M)-41.7 (8M)-65.3 (16M).1208 : (4M)-2.32 (8M)-3.33 (16M)-3.47 :
 USTAR : (4M).0021 (8M).0003 (16M).0000 : (4M).0918(8M).1081 (16M).1208 : (4M).1527 (8M).1583 (16M).1594 :

| HEIGHT (M) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|
| 1. | | | | | | | | | | | | | | | |
| 2. | 63. | .32 | -31 | 21.3 | | 167. | .42 | 2.31 | 77.0 | | 11. | 1.46 | 4.24 | 27.7 | |
| 4. | 39. | .41 | -35 | 15.1 | | 1. | .50 | 2.17 | 84.1 | | 1. | 1.57 | 4.06 | 25.5 | |
| 8. | 60. | .35 | -41 | 13.4 | 26.3 | 215. | .48 | 1.97 | 31.1 | 40.1 | 5. | 1.66 | 3.89 | 20.9 | 13.8: |
| 16. | 75. | .34 | -54 | 4.3 | 29.5 | 219. | .47 | 1.85 | 43.5 | 46.1 | 356. | 1.80 | 3.72 | 17.1 | 18.1: |
| 32. | 112. | .45 | 1.08 | .1 | 8.8 | 165. | .56 | 1.69 | 43.1 | 33.3 | 2. | 1.92 | 3.51 | 15.2 | 17.5: |
| 48. | 124. | .12 | 1.49 | .3 | 3.0 | 144. | .50 | 1.36 | 52.8 | 42.1 | 8. | 1.97 | 3.29 | 11.8 | 16.6: |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------|----------|------------|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|
| 1.0 | .47 | -40 | 153.0 | 496.4 | | .43 | 2.25 | 77.2 | 45.5 | | 1.37 | 4.28 | 35.1 | 12.3 |
| 2.0 | .42 | -39 | 47.4 | 212.6 | | .44 | 2.22 | 68.8 | 44.2 | | 1.46 | 4.24 | 29.3 | 13.1 |
| 4.0 | .37 | -36 | 14.7 | 91.1 | | .46 | 2.17 | 61.4 | 43.0 | | 1.56 | 4.15 | 24.5 | 14.0 |
| 8.0 | .32 | -30 | 4.6 | 39.0 | | .48 | 2.07 | 54.7 | 41.8 | | 1.67 | 4.00 | 20.4 | 15.0 |
| 16.0 | .29 | -09 | 1.4 | 16.7 | | .50 | 1.89 | 48.8 | 40.6 | | 1.79 | 3.74 | 17.1 | 16.0 |
| 32.0 | .25 | .59 | .4 | 7.2 | | .52 | 1.60 | 43.5 | 39.5 | | 1.91 | 3.41 | 14.2 | 17.1 |
| 48.0 | .24 | 1.65 | .2 | 4.4 | | .53 | 1.39 | 40.7 | 38.8 | | 1.99 | 3.33 | 12.8 | 17.8 |

| | DU/DZ | DTH/DZ | RU*100 | RI | DU/DZ | DTH/DZ | RU*100 | RI |
|-------|--------|--------|---------|-----|--------|--------|----------|---------|
| 4.0 | -.0153 | .0252 | 10.75 | .00 | .0058 | -.0150 | -4.009 | -.22 |
| 8.0 | -.0067 | .0325 | 71.05 | .00 | .0030 | -.0132 | -13.157 | -8.39 |
| 16.0 | -.0030 | .0471 | 527.5 | .00 | .0016 | -.0098 | -36.05 | -191.52 |
| 39.2* | -.0206 | .0356 | 3621.00 | .00 | -.0037 | -.0106 | -207.544 | |

* OBSERVED DATA

OBSERVED DATA

| | DATE 16/02/77 | TIME 12:00:00 | DATE 16/02/77 | TIME 13:00:00 | DATE 16/02/77 | TIME 14:00:00 |
|-----------------|---------------|-----------------|---------------|-----------------|---------------|-----------------|
| WEATHER | | | | | | |
| TEMP DEG C | 8.9 | | 10.5 | | 12.8 | |
| DEW POINT DEG C | -5.6 | | -5.6 | | -4.4 | |
| VISIBILITY (MI) | 85 | | 85 | | 85 | |
| LOW MID HI | 6 7622 | 5 7622 | 5 7622 | 10 7622 | 10 7622 | |
| CLD (TENTHS) | LOW | MID | LOW | MID | LOW | MID |
| CLD HT (M) | LOW | MID | LOW | MID | LOW | MID |
| EXPONENTS | A = -.05 | R = .25 | P = .10 | A = -.29 | R = .02 | P = .07 |
| NET RADIATION | 33.70 | MM/CM2 | 32.93 | MM/CM2 | 28.95 | MM/CM2 |
| RICHARDSON NO. | (4M) -.68 | (8M) -2.00 | (16M) -4.32 | (4M) -5.42 | (8M) -17.0 | (16M) -44.0 |
| (1/L)*10 | (39.192M) | (OBSERVED DATA) | (39.192M) | (OBSERVED DATA) | (39.192M) | (OBSERVED DATA) |
| USTAR | (4M) -1.83 | (8M) -2.65 | (16M) -2.84 | (4M) -14.4 | (8M) -22.3 | (16M) -28.8 |
| | (4M) -2.117 | (8M) -2.182 | (16M) -2.205 | (4M) -0.892 | (8M) -0.993 | (16M) -1.058 |

| HEIGHT (M) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) |
|------------|----------|----------|----------|------------|----------|----------|----------|------------|----------|----------|----------|------------|
| 1. | | | 6.62 | | | | 8.76 | | | | 12.11 | |
| 2. | 21. | 2.06 | 6.38 | 18.5 | 42. | .64 | 8.68 | 76.7 | 128. | 1.08 | 12.03 | 47.0 |
| 4. | 11. | 2.24 | 6.14 | 17.1 | 49. | .69 | 8.53 | 78.1 | 121. | 1.19 | 11.76 | 48.7 |
| 8. | 19. | 2.40 | 5.88 | 15.7 | 34. | .63 | 8.41 | 78.6 | 24.1 | 1.20 | 11.59 | 42.0 |
| 16. | 8. | 2.62 | 5.62 | 15.3 | 36. | .67 | 8.28 | 70.3 | 38.5 | 1.29 | 11.47 | 33.7 |
| 32. | 10. | 2.79 | 5.33 | 16.9 | 39. | .71 | 8.03 | 29.8 | 27.6 | 1.29 | 11.17 | 40.7 |
| 48. | 16. | 2.73 | 5.08 | 15.1 | 60. | .88 | 7.75 | 37.7 | 27.7 | 1.27 | 11.13 | 29.1 |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) |
|------------|----------|----------|----------|------------|----------|----------|----------|------------|----------|----------|----------|------------|
| 1.0 | | | 6.43 | 18.3 | 7.2 | .59 | 8.68 | 114.4 | 27.0 | 1.08 | 12.01 | 54.5 |
| 2.0 | 2.09 | 6.37 | 17.7 | 8.5 | | .62 | 8.65 | 93.7 | 27.5 | 1.12 | 11.97 | 49.6 |
| 4.0 | 2.24 | 6.25 | 17.1 | 10.1 | | .65 | 8.59 | 76.8 | 27.9 | 1.16 | 11.87 | 45.2 |
| 8.0 | 2.39 | 6.02 | 16.6 | 12.1 | | .68 | 8.48 | 63.0 | 28.3 | 1.20 | 11.70 | 41.2 |
| 16.0 | 2.55 | 5.65 | 16.1 | 14.3 | | .72 | 8.28 | 51.6 | 28.8 | 1.24 | 11.43 | 37.5 |
| 32.0 | 2.73 | 5.19 | 15.6 | 17.0 | | .76 | 7.97 | 42.3 | 29.3 | 1.29 | 11.12 | 34.2 |
| 48.0 | 2.84 | 5.13 | 15.3 | 18.8 | | .78 | 7.77 | 37.7 | 29.5 | 1.31 | 11.15 | 32.3 |

| | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI |
|-------|--------|--------|--------|-------|-------|--------|--------|--------|
| 4.0 | .0495 | -.0477 | -.535 | -.18 | .0108 | -.0182 | -2.386 | -.43 |
| 8.0 | .0265 | -.0400 | -1.574 | -1.00 | .0057 | -.0159 | -7.566 | -2.82 |
| 16.0 | .0141 | -.0246 | -3.394 | -5.82 | .0030 | -.0114 | -19.61 | -53.72 |
| 39.2* | -.0038 | -.0056 | -3.984 | -6.26 | .0106 | -.0075 | -64.95 | |

* OBSERVED DATA

OBSERVED DATA

| | DATE 16/02/77 | TIME 16:00:00 | DATE 16/02/77 | TIME 17:00:00 | DATE 16/02/77 | TIME 18:00:00 |
|-----------------|--|-----------------|--------------------------------|-----------------|--------------------------------|-----------------|
| WEATHER | WEATHER | WEATHER | WEATHER | WEATHER | WEATHER | WEATHER |
| TEMP DEG C | 14.4 | TEMP DEG C | 15.0 | TEMP DEG C | 13.3 | TEMP DEG C |
| DEW POINT DEG C | -5.6 | DEW POINT DEG C | -5.0 | DEW POINT DEG C | -5.6 | DEW POINT DEG C |
| VISIBILITY (MI) | 85 | VISIBILITY (MI) | 85 | VISIBILITY (MI) | 85 | VISIBILITY (MI) |
| CLD (TENTHS) | LOW | CLD (TENTHS) | LOW | CLD (TENTHS) | LOW | CLD (TENTHS) |
| CLD HT (M) | 4878 | CLD HT (M) | 4878 | CLD HT (M) | 4878 | CLD HT (M) |
| EXPONENTS | A = -.24 | EXPONENTS | A = -.04 | EXPONENTS | A = -.65 | EXPONENTS |
| NET RADIATION | 7.18 MW/CM2 | NET RADIATION | -1.74 MW/CM2 | NET RADIATION | -6.83 MW/CM2 | NET RADIATION |
| RICHARDSON NO. | (4M)-8.76 (8M)-29.3 (16M)-76.08 | RICHARDSON NO. | (4M)-1.19 (8M)-.62 (16M)-1.73 | RICHARDSON NO. | (4M)-.34 (8M)-.56 (16M)-.82 | RICHARDSON NO. |
| (L/L)*10 | (39.192M)***** (OBSERVED DATA): (39.192M)-47.6 | (L/L)*10 | (4M)-.54 (8M)-.83 (16M)-1.15 | (L/L)*10 | (4M)-5.15 (8M)-6.66 (16M)-6.77 | (L/L)*10 |
| USTAR | (4M).1553 (8M).1751 (16M).1860 | USTAR | (4M).1459 (8M).1451 (16M).1478 | USTAR | (4M).0245 (8M).0255 (16M).0283 | USTAR |
| HEIGHT (M) | WD (M/S) | TEMP (C) | SIGA (DEG) | WD (M/S) | TEMP (C) | SIGA (DEG) |
| 1. | 61. | 12.40 | 12.04 | 50 | 10.29 | 24.7 |
| 2. | 91 | 12.39 | 12.04 | 69 | 10.62 | 24.7 |
| 4. | 1.01 | 12.27 | 11.92 | 81 | 10.76 | 15.2 |
| 8. | 1.01 | 12.14 | 11.81 | 1.57 | 10.85 | 1.9 |
| 16. | 1.02 | 12.09 | 11.81 | 2.39 | 11.32 | 3.7 |
| 32. | 1.03 | 11.86 | 11.57 | 2.66 | 12.12 | 4.7 |
| 48. | 1.02 | 11.64 | 11.35 | 5.7 | 12.29 | 2.5 |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|---|----------|----------|------------|------------|----------|----------|------------|------------|----------|----------|------------|------------|
| 1.0 | .93 | 12.37 | 30.2 | 8.2 | 1.55 | 12.01 | 11.5 | 6.1 | .31 | 10.43 | 35.3 | .8 |
| 2.0 | .95 | 12.35 | 25.5 | 9.1 | 1.64 | 11.99 | 11.2 | 6.2 | .46 | 10.50 | 22.4 | .9 |
| 4.0 | .97 | 12.30 | 21.6 | 10.1 | 1.74 | 11.96 | 10.9 | 6.3 | .68 | 10.65 | 14.3 | 1.1 |
| 8.0 | .99 | 12.22 | 18.2 | 11.3 | 1.84 | 11.90 | 10.6 | 6.3 | 1.00 | 10.92 | 9.1 | 1.3 |
| 16.0 | 1.01 | 12.07 | 15.4 | 12.6 | 1.95 | 11.77 | 10.4 | 6.4 | 1.48 | 11.39 | 5.8 | 1.6 |
| 32.0 | 1.03 | 11.83 | 13.0 | 14.1 | 2.06 | 11.55 | 10.1 | 6.5 | 2.18 | 12.05 | 3.7 | 2.0 |
| 48.0 | 1.04 | 11.65 | 11.8 | 15.0 | 2.13 | 11.36 | 9.9 | 6.5 | 2.74 | 12.31 | 2.8 | 2.2 |
| DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI | | | | | | | | | | | | |
| 4.0 | .0065 | -.0107 | -.622 | -.05 | .0331 | -.0061 | -.111 | -.04 | .0903 | .0799 | 9.520 | .00 |
| 8.0 | .0033 | -.0093 | -2.073 | -.24 | .0175 | -.0055 | -.359 | -.16 | .0665 | .0723 | 15.840 | .00 |
| 16.0 | .0017 | -.0064 | -5.543 | -4.22 | .0093 | -.0043 | -1.007 | -.87 | .0490 | .0570 | 22.964 | .00 |
| 39.2* | -.0006 | -.0037 | -18.837 | -142.44 | .0081 | -.0038 | -4.726 | -34.30 | .0169 | .0206 | 17.250 | .00 |

* OBSERVED DATA

* OBSERVED DATA

[illegible]

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1.0 | .88 | 7.39 | 14.8 | .1 | .50 | 2.50 | .8 | 162.8 | .84 | 5.17 | 3.7 | .3 |
| 2.0 | 1.10 | 7.82 | 12.4 | .2 | .56 | 3.04 | 1.7 | 90.7 | .99 | 5.32 | 4.3 | .4 |
| 4.0 | 1.37 | 8.62 | 10.4 | .3 | .62 | 4.09 | 3.3 | 50.6 | 1.18 | 5.62 | 5.0 | .7 |
| 8.0 | 1.72 | 10.07 | 8.7 | .6 | .69 | 6.00 | 6.6 | 28.2 | 1.40 | 6.16 | 5.8 | 1.1 |
| 16.0 | 2.15 | 12.29 | 7.3 | 1.0 | .77 | 9.09 | 13.2 | 15.7 | 1.67 | 7.05 | 6.7 | 1.7 |
| 32.0 | 2.68 | 14.06 | 6.1 | 1.9 | .85 | 12.37 | 26.2 | 8.8 | 1.98 | 8.09 | 7.8 | 2.7 |
| 48.0 | 3.05 | 12.27 | 5.5 | 2.7 | .91 | 11.79 | 39.2 | 6.2 | 2.19 | 8.14 | 8.5 | 3.5 |
| | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI |
| 4.0 | .1029 | .3849 | 11.332 | .00 | .0220 | .5021 | 73.831 | .00 | .0680 | .1488 | 5.997 | .00 |
| 8.0 | .0642 | .3154 | 23.677 | .00 | .0122 | .4266 | 201.603 | .00 | .0403 | .1294 | 14.772 | .00 |
| 16.0 | .0401 | .1764 | 33.669 | .00 | .0068 | .2756 | 416.874 | .00 | .0240 | .0907 | 29.268 | .00 |
| 39.2* | .0056 | .0012 | 1.004 | .00 | -.0069 | .0269 | 163.893 | .00 | .0013 | .0531 | 66.455 | .00 |

A-15

[illegible]

| HEIGHT (M) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : |
|--------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|-----------------|
| 1.0 : | 1.50 : | .48 : | 36.2 : | .2 : | 1.58 : | 1.44 : | 3.8 : | .3 : | 1.08 : | -1.74 : | 12.0 : | .6 : |
| 2.0 : | 1.50 : | .76 : | 35.1 : | .4 : | 2.02 : | 1.74 : | 3.9 : | .4 : | 1.28 : | -1.31 : | 11.9 : | .9 : |
| 4.0 : | 1.50 : | 1.30 : | 34.1 : | 1.0 : | 2.58 : | 2.30 : | 4.0 : | .7 : | 1.50 : | -4.49 : | 11.8 : | 1.5 : |
| 8.0 : | 1.50 : | 2.29 : | 33.2 : | 2.0 : | 3.29 : | 3.33 : | 4.1 : | 1.1 : | 1.77 : | 1.03 : | 11.7 : | 2.4 : |
| 16.0 : | 1.50 : | 3.86 : | 32.2 : | 4.4 : | 4.19 : | 4.97 : | 4.2 : | 1.7 : | 2.08 : | 3.60 : | 11.6 : | 3.9 : |
| 32.0 : | 1.50 : | 5.41 : | 31.3 : | 9.3 : | 5.35 : | 6.61 : | 4.3 : | 2.7 : | 2.45 : | 6.86 : | 11.5 : | 6.4 : |
| 48.0 : | 1.50 : | 4.83 : | 30.8 : | 14.4 : | 6.16 : | 6.05 : | 4.4 : | 3.6 : | 2.70 : | 7.60 : | 11.4 : | 8.4 : |

| | | | | | | | | | | | | |
|-------|----------|-------|---------|-----|---------|-------|--------|-----|---------|-------|--------|-----|
| 4.0 | : -.0001 | .2645 | 6.680 | .00 | : .2110 | .2750 | 2.358 | .00 | : .0823 | .4003 | 10.186 | .00 |
| 8.0 | : -.0001 | .2230 | 22.458 | .00 | : .1346 | .2322 | 4.878 | .00 | : .0485 | .3512 | 25.631 | .00 |
| 16.0 | : -.0000 | .1400 | 56.098 | .00 | : .0858 | .1467 | 7.530 | .00 | : .0285 | .2529 | 52.748 | .00 |
| 39.2* | : -.0131 | .0500 | 135.103 | .00 | : .0169 | .0638 | 10.840 | .00 | : .0588 | .1531 | 88.938 | .00 |

[illegible]

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1.0 | 2.43 | -1.95 | 8.7 | .1 | 1.51 | -3.98 | 24.4 | 1.8 | .15 | -4.29 | 5.1 | 1.1 |
| 2.0 | 1.89 | -1.52 | 8.6 | .3 | 1.72 | -3.57 | 19.3 | 1.7 | .23 | -4.03 | 6.8 | 1.3 |
| 4.0 | 1.46 | -.68 | 8.6 | .6 | 1.96 | -2.79 | 15.2 | 1.7 | .35 | -3.54 | 9.2 | 1.6 |
| 8.0 | 1.13 | .84 | 8.5 | 1.5 | 2.24 | -1.33 | 12.0 | 1.7 | .53 | -2.60 | 12.3 | 2.0 |
| 16.0 | .88 | 3.28 | 8.4 | 3.5 | 2.56 | 1.15 | 9.5 | 1.6 | .81 | -.94 | 16.6 | 2.5 |
| 32.0 | .68 | 5.71 | 8.3 | 8.5 | 2.92 | 4.30 | 7.5 | 1.6 | 1.25 | 1.53 | 22.3 | 3.1 |
| 48.0 | .50 | 4.91 | 8.2 | 14.1 | 3.15 | 5.07 | 6.5 | 1.6 | 1.61 | 2.87 | 26.6 | 3.5 |
| | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI |
| 4.0 | -.1255 | .4029 | 10.831 | .00 | .0867 | .3845 | 5.779 | .00 | .0509 | .2488 | 120.960 | .00 |
| 8.0 | -.0486 | .3396 | 60.420 | .00 | .0495 | .3379 | 15.513 | .00 | .0391 | .2266 | 186.441 | .00 |
| 16.0 | -.0189 | .2130 | 249.967 | .00 | .0282 | .2445 | 34.174 | .00 | .0300 | .1823 | 253.072 | .00 |
| 39.2* | .0169 | .0362 | 645.254 | .00 | -.0437 | .0381 | 26.430 | .00 | .0037 | .1425 | 456.501 | .00 |

A-17

OBSERVED DATA

| DATE 17/02/77 | | TIME 04:00:00 | | DATE 17/02/77 | | TIME 05:00:00 | | DATE 17/02/77 | | TIME 06:00:00 | | |
|-----------------------|---------------------------|-----------------------|--------------------------|-----------------------|--------------------------|-----------------------|--------------------------|-----------------------|--------------------------|-----------------------|--------------------------|----------------------|
| WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | |
| TEMP DEG C -3.3 | | TEMP DEG C -3.3 | | TEMP DEG C -3.3 | | TEMP DEG C -3.3 | | TEMP DEG C -3.3 | | TEMP DEG C -3.3 | | |
| DEW POINT DEG C -11.1 | | DEW POINT DEG C -11.1 | | DEW POINT DEG C -11.7 | | DEW POINT DEG C -11.7 | | DEW POINT DEG C -11.7 | | DEW POINT DEG C -11.7 | | |
| VISIBILITY (MI) 25 | | VISIBILITY (MI) 25 | | VISIBILITY (MI) 25 | | VISIBILITY (MI) 25 | | VISIBILITY (MI) 25 | | VISIBILITY (MI) 25 | | |
| CLD (TENTHS) | LOW | MID | HI | 10 TOTL | 10:LOW | MID | HI | 7 TOTL | 7:LOW | MID | HI | |
| CLD HT (M) | LOW | MID | HI | 7622 | LOW | MID | HI | 7622 | LOW | MID | HI | |
| EXPONENTS | A = -.72 B = -.04 P = .50 | | A = -.24 B = .19 P = .55 | | A = -.14 B = .68 P = .09 | | A = -.09 B = .59 P = .09 | | A = -.09 B = .59 P = .09 | | A = -.09 B = .59 P = .09 | |
| NET RADIATION | -5.37 MW/CM2 | | -4.67 MW/CM2 | | -4.67 MW/CM2 | | -5.09 MW/CM2 | | -5.09 MW/CM2 | | -5.09 MW/CM2 | |
| RICHARDSON NO. | (4M) | .75 (8M) | 1.33 (16M) | 1.93 | (4M) | 5.40 (8M) | 8.38 (16M) | 9.57 | (4M) | 28.74 (8M) | 86.67 (16M) | 206.2 |
| (1/L)*10 | (39.192M) | 10.25 (OBSERVED DATA) | (39.192M) | .66 (OBSERVED DATA) | (39.192M) | .66 (OBSERVED DATA) | (39.192M) | .737 (OBSERVED DATA) | (39.192M) | .737 (OBSERVED DATA) | (39.192M) | .737 (OBSERVED DATA) |
| USTAR | (4M) | 23.00 (8M) | 34.58 (16M) | 36.19 | (4M) | 0.0000 (8M) | 0.0000 (16M) | 0.0000 | (4M) | 0.0000 (8M) | 0.0000 (16M) | 0.0000 |
| | (4M) | 0.203 (8M) | 0.179 (16M) | 0.182 | (4M) | 0.014 (8M) | 0.013 (16M) | 0.017 | (4M) | 0.009 (8M) | 0.003 (16M) | 0.001 |
| HEIGHT (M) | WD | WS | TEMP (C) | SIGA (DEG) | WD | WS | TEMP (C) | SIGA (DEG) | WD | WS | TEMP (C) | SIGA (DEG) |
| 1. | 72. | .69 | -3.93 | 39.3 | 129. | .30 | -2.36 | 29.3 | 171. | .96 | -5.93 | 19.4 |
| 2. | | .88 | -3.34 | | | .24 | -.65 | | | 1.54 | -3.75 | |
| 4. | 10. | 1.05 | -2.85 | 27.6 | 2.1 | .34 | -.11 | 27.4 | 1.4 | .90 | -2.08 | 21.7 |
| 8. | 335. | 2.24 | -.92 | 8.3 | 2.8 | 290. | 1.01 | .46 | 18.1 | .76 | -.05 | 12.8 |
| 16. | 324. | 2.92 | .65 | 8.7 | 2.2 | 270. | 1.39 | 1.99 | 14.7 | 1.75 | 1.86 | 8.0 |
| 32. | 337. | 2.71 | 1.28 | 3.6 | 2.1 | 283. | 1.03 | 1.98 | 15.5 | 1.42 | 3.11 | 19.6 |
| 48. | | | | | | | | | | | | |

LEAST SQUARES FITTED DATA

| DATE 17/02/77 | | TIME 04:00:00 | | DATE 17/02/77 | | TIME 05:00:00 | | DATE 17/02/77 | | TIME 06:00:00 | | | |
|-----------------------|---------------------------|-----------------------|--------------------------|-----------------------|--------------------------|-----------------------|--------------------------|-----------------------|--------------------------|-----------------------|--------------------------|----------------------|--|
| WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | | |
| TEMP DEG C -3.3 | | TEMP DEG C -3.3 | | TEMP DEG C -3.3 | | TEMP DEG C -3.3 | | TEMP DEG C -3.3 | | TEMP DEG C -3.3 | | | |
| DEW POINT DEG C -11.1 | | DEW POINT DEG C -11.1 | | DEW POINT DEG C -11.7 | | DEW POINT DEG C -11.7 | | DEW POINT DEG C -11.7 | | DEW POINT DEG C -11.7 | | | |
| VISIBILITY (MI) 25 | | VISIBILITY (MI) 25 | | VISIBILITY (MI) 25 | | VISIBILITY (MI) 25 | | VISIBILITY (MI) 25 | | VISIBILITY (MI) 25 | | | |
| CLD (TENTHS) | LOW | MID | HI | 10 TOTL | 10:LOW | MID | HI | 7 TOTL | 7:LOW | MID | HI | | |
| CLD HT (M) | LOW | MID | HI | 7622 | LOW | MID | HI | 7622 | LOW | MID | HI | | |
| EXPONENTS | A = -.72 B = -.04 P = .50 | | A = -.24 B = .19 P = .55 | | A = -.14 B = .68 P = .09 | | A = -.09 B = .59 P = .09 | | A = -.09 B = .59 P = .09 | | A = -.09 B = .59 P = .09 | | |
| NET RADIATION | -5.37 MW/CM2 | | -4.67 MW/CM2 | | -4.67 MW/CM2 | | -5.09 MW/CM2 | | -5.09 MW/CM2 | | -5.09 MW/CM2 | | |
| RICHARDSON NO. | (4M) | .75 (8M) | 1.33 (16M) | 1.93 | (4M) | 5.40 (8M) | 8.38 (16M) | 9.57 | (4M) | 28.74 (8M) | 86.67 (16M) | 206.2 | |
| (1/L)*10 | (39.192M) | 10.25 (OBSERVED DATA) | (39.192M) | .66 (OBSERVED DATA) | (39.192M) | .66 (OBSERVED DATA) | (39.192M) | .737 (OBSERVED DATA) | (39.192M) | .737 (OBSERVED DATA) | (39.192M) | .737 (OBSERVED DATA) | |
| USTAR | (4M) | 23.00 (8M) | 34.58 (16M) | 36.19 | (4M) | 0.0000 (8M) | 0.0000 (16M) | 0.0000 | (4M) | 0.0000 (8M) | 0.0000 (16M) | 0.0000 | |
| | (4M) | 0.203 (8M) | 0.179 (16M) | 0.182 | (4M) | 0.014 (8M) | 0.013 (16M) | 0.017 | (4M) | 0.009 (8M) | 0.003 (16M) | 0.001 | |
| HEIGHT (M) | WD | WS | TEMP (C) | SIGA (DEG) | WD | WS | TEMP (C) | SIGA (DEG) | WD | WS | TEMP (C) | SIGA (DEG) | |
| 1.0 | .46 | -4.23 | 79.3 | 2.6 | .16 | -2.92 | 37.2 | 1.0 | .93 | -5.75 | 22.2 | .2 | |
| 2.0 | .65 | -3.99 | 48.1 | 2.5 | .23 | -2.60 | 31.5 | 1.1 | 1.00 | -5.30 | 20.1 | .3 | |
| 4.0 | .92 | -3.51 | 29.2 | 2.4 | .34 | -2.00 | 26.7 | 1.2 | 1.06 | -4.45 | 18.2 | .5 | |
| 8.0 | 1.29 | -2.63 | 17.7 | 2.4 | .49 | -.91 | 22.7 | 1.4 | 1.13 | -2.89 | 16.5 | .8 | |
| 16.0 | 1.82 | -1.13 | 10.7 | 2.3 | .73 | .82 | 19.2 | 1.6 | 1.21 | -.30 | 14.9 | 1.3 | |
| 32.0 | 2.57 | .78 | 6.5 | 2.2 | 1.07 | 2.48 | 16.3 | 1.9 | 1.29 | 2.69 | 13.5 | 2.1 | |
| 48.0 | 3.14 | 1.24 | 4.8 | 2.2 | 1.33 | 1.75 | 14.8 | 2.0 | 1.34 | 2.79 | 12.7 | 2.8 | |
| DU/DZ | | DTH/DZ | | DU/DZ | | DTH/DZ | | DU/DZ | | DTH/DZ | | DU/DZ | |
| .1070 | | .2367 | | .0442 | | .2915 | | .00 | | .4123 | | .00 | |
| .0755 | | .2084 | | .0324 | | .2448 | | .00 | | .3557 | | .00 | |
| .0532 | | .1519 | | .0238 | | .1514 | | .00 | | .2426 | | .00 | |
| .0131 | | .0494 | | .0225 | | .0094 | | .00 | | .0881 | | .00 | |

* OBSERVED DATA

| | DATE 17/02/77 | TIME 07:00:00 | DATE 17/02/77 | TIME 08:00:00 | DATE 17/02/77 | TIME 09:00:00 |
|----------------|-----------------|---------------------------|------------------|--------------------------|-----------------|----------------------------|
| CLD (TENTHS) | WEATHER | | WEATHER | | WEATHER | |
| | TEMP DEG C | -5.0 | TEMP DEG C | -4.4 | TEMP DEG C | 0.0 |
| | DEW POINT DEG C | -11.1 | DEW POINT DEG C | -10.0 | DEW POINT DEG C | -8.3 |
| | VISIBILITY (MI) | 25 | VISIBILITY (MI) | 60 | VISIBILITY (MI) | 70 |
| | MID | 4 HI 10 TOTL | MID 8 HI 10 TOTL | MID 4 HI 10 TOTL | | |
| CLD HT (M) | LOW | MID 4268 HI 7622 | LOW | MID 4268 HI 7622 | LOW | MID 4268 HI 7622 |
| EXPONENTS | A = | .19 B = 1.04 P = .02 | A = | .02 B = .10 P = .15 | A = | -.36 B = -.73 P = .32 |
| NET RADIATION | | -3.97 MW/CM2 | | 0.00 MW/CM2 | | 7.60 MW/CM2 |
| RICHARDSON NO. | (4M) | .26*(8M)***** (16M)***** | (4M) | .035*(8M) .21*(16M)13.38 | (4M) | -.15 (8M) -.11(16M) 1.07 |
| | (39.192M) | 8.57 (OBSERVED DATA) | (39.192M) | .87 (OBSERVED DATA) | (39.192M) | 18.77 (OBSERVED DATA) |
| (1/L)*10 | (4M) | 3.17*(8M)***** (16M)***** | (4M) | .13*(8M) 1.13*(16M)***** | (4M) | -.42 (8M) -.16 (16M)11.30 |
| USTAR | (4M) | .078*(8M).0000 (16M).0000 | (4M) | .130*(8M).099*(16M).0042 | (4M) | 1.050 (8M).1114 (16M).0076 |

| HEIGHT (M) | : WD :(DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG)::(DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG)::(DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------------|-------------|-------------|---------------|----------------------|-------------|-------------|-------------|---------------|----------------------|-------------|-------------|-------------|---------------|---------------|
| 1. | : | | -6.60 | | : | | | -4.58 | | : | | | -6.1 | | : |
| 2. | : | 171. | -6.43 | 8.0 | | 155. | 1.58 | -4.56 | 8.5 | | 102. | 1.17 | -7.2 | 11.6 | : |
| 4. | : | | -5.84 | | : | | 1.91 | -4.58 | | | | 1.31 | -8.5 | | : |
| 8. | : | 156. | -3.28 | 5.0 | 1.6: | 150. | 2.41 | -4.51 | 6.8 | 3.1: | 95. | 1.35 | -9.6 | 9.1 | 6.3: |
| 16. | : | 132. | -5.4 | 5.5 | 2.0: | 152. | 3.73 | -3.08 | 5.8 | 1.1: | 94. | 1.53 | -1.02 | 8.2 | 5.8: |
| 32. | : | 177. | 1.43 | 16.7 | 7.2: | 124. | 3.26 | .89 | 9.2 | 11.0: | 99. | 2.88 | -2.8 | 4.9 | 3.2: |
| 48. | : | 251. | 1.74 | 10.8 | 8.3: | 126. | 1.97 | 3.28 | 8.7 | 1.5: | 109. | 3.15 | 1.95 | 3.5 | 1.7: |

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1.0 | 1.82 | -6.59 | 5.1 | .2 | 1.64 | -4.93 | 7.2 | 2.0 | .81 | -.63 | 17.3 | 34.2 |
| 2.0 | 1.84 | -6.17 | 5.8 | .3 | 1.83 | -4.79 | 7.4 | 2.1 | 1.02 | -.70 | 13.5 | 20.6 |
| 4.0 | 1.86 | -5.35 | 6.6 | .7 | 2.03 | -4.52 | 7.5 | 2.3 | 1.27 | -.81 | 10.5 | 12.5 |
| 8.0 | 1.89 | -3.85 | 7.5 | 1.4 | 2.26 | -3.93 | 7.6 | 2.5 | 1.59 | -.98 | 8.2 | 7.5 |
| 16.0 | 1.91 | -1.37 | 8.6 | 2.8 | 2.51 | -2.68 | 7.7 | 2.6 | 1.99 | -1.07 | 6.4 | 4.6 |
| 32.0 | 1.93 | 1.44 | 9.9 | 5.7 | 2.79 | .18 | 7.8 | 2.8 | 2.48 | -.23 | 5.0 | 2.7 |
| 48.0 | 1.95 | 1.42 | 10.6 | 8.7 | 2.97 | 3.53 | 7.9 | 3.0 | 2.83 | 1.94 | 4.3 | 2.0 |
| | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI |
| 4.0 | .0076 | .3968 | 6.684 | .00 | .0718 | .1534 | 2.169 | .00 | .0954 | -.0373 | -1.328 | -.98 |
| 8.0 | .0039 | .3414 | 22.317 | .00 | .0399 | .1628 | 7.438 | .00 | .0596 | -.0111 | -1.017 | -1.04 |
| 16.0 | .0020 | .2305 | 58.267 | .00 | .0222 | .1816 | 26.738 | .00 | .0373 | .0411 | 9.599 | .00 |
| 39.2* | .0194 | .0900 | 200.595 | .00 | -.0806 | .1594 | 121.384 | .00 | .0169 | .1494 | 91.131 | .00 |

A-19

OBSERVED DATA

```

: DATE 17/02/77 TIME 10:00:00 : DATE 17/02/77 TIME 11:00:00 : DATE 17/02/77 TIME 12:00:00 :
: WEATHER : WEATHER : WEATHER :
: TEMP DEG C 3.3 : TEMP DEG C 7.2 : TEMP DEG C 10.0 :
: DEW POINT DEG C -6.7 : DEW POINT DEG C -5.5 : DEW POINT DEG C -5.5 :
: VISIBILITY (MI) 70 : VISIBILITY (MI) 85 : VISIBILITY (MI) 85 :
: MID 4 HI 10 TOTL 10 :LOW MID 4 HI 10 TOTL 10 :LOW MID 4 HI 10 TOTL 10 :
: CLD (TENTHS) :LOW MID 4270 HI 7622 :LOW MID 4270 HI 7622 :LOW MID 4270 HI 7622 :
: CLD HT (M) :LOW MID 4270 HI 7622 :LOW MID 4270 HI 7622 :LOW MID 4270 HI 7622 :
: NET RADIATION : 14.51 MW/CM2 : 23.58 MW/CM2 : 25.75 MW/CM2 :
: EXPONENTS : A = .04 B = .24 P = .04 : A = .05 B = .21 P = .10 : A = .05 B = .17 P = .10 :
: RICHARDSON NO.: (4M)-7.59 (8M)-22.1 (16M)-35.0 : (4M)-6.7 (8M)-1.63 (16M) -.68 : (4M)-1.36 (8M)-4.05 (16M)-9.18 :
: (1/L)*10 : (39.192M)31.92 (OBSERVED DATA): (39.192M) .00 (OBSERVED DATA): (39.192M)-8.01 (OBSERVED DATA):
: USTAR : (4M)-19.9 (8M) -27.6 (16M) -21.9: (4M)-1.81 (8M)-2.16 (16M) -.46: (4M)-3.61 (8M)-5.32 (16M)-6.02:
: (4M)-.1528 (8M) .1641 (16M) .1466: (4M).1123 (8M).1126 (16M).0935: (4M).1143 (8M).1204 (16M).1236:

```

```

: WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE :
: HEIGHT (M) : (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) :
: 1. : 216. : .93 3.80 17.0 : 280. : 1.09 6.04 24.6 : 45. : 1.01 7.34 21.3 :
: 2. : : 1.02 3.60 : : 1.22 5.92 : : 1.13 7.20 : :
: 4. : 212. : 1.04 3.41 12.9 11.1: 276. : 1.26 5.79 23.8 12.3: 40. : 1.14 7.06 25.8 17.8:
: 8. : 206. : 1.12 3.30 11.8 14.0: 267. : 1.36 5.72 22.7 16.1: 22. : 1.28 6.93 20.5 20.1:
: 16. : 203. : 1.10 3.18 17.0 17.8: 266. : 1.48 5.62 28.0 16.4: 14. : 1.32 6.67 26.0 21.5:
: 32. : 195. : 1.06 3.11 19.8 16.2: 262. : 1.48 5.66 29.4 18.8: 5. : 1.39 6.44 25.2 24.8:
: 48. : : : : : : : : : :

```

LEAST SQUARES FITTED DATA

```

: WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE :
: HEIGHT (M) : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) :
: 1.0 : .94 3.74 13.8 7.0 : 1.04 6.02 22.2 8.3 : .96 7.38 21.0 12.4 :
: 2.0 : .97 3.71 14.2 8.2 : 1.11 6.00 23.0 9.6 : 1.03 7.34 21.7 14.0 :
: 4.0 : 1.00 3.64 14.7 9.7 : 1.19 5.94 23.9 11.1 : 1.10 7.28 22.4 15.7 :
: 8.0 : 1.03 3.52 15.1 11.5 : 1.27 5.85 24.9 12.8 : 1.17 7.15 23.1 17.7 :
: 16.0 : 1.06 3.32 15.5 13.6 : 1.36 5.71 25.8 14.8 : 1.25 6.92 23.8 19.9 :
: 32.0 : 1.09 3.10 16.0 16.1 : 1.45 5.59 26.8 17.2 : 1.34 6.61 24.6 22.4 :
: 48.0 : 1.11 3.14 16.3 17.8 : 1.51 5.67 27.5 18.7 : 1.39 6.47 25.1 24.0 :
: DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI :
: 4.0 : .0101 -.0217 -1.234 -.13 : .0265 -.0134 -.535 -.18 : .0242 -.0227 -1.058 -.31 :
: 8.0 : .0052 -.0169 -3.611 -.65 : .0142 -.0093 -1.299 -.82 : .0129 -.0193 -3.153 -2.52 :
: 16.0 : .0027 -.0072 -5.781 -4.74 : .0076 -.0011 -.540 -.34 : .0069 -.0125 -7.150 -14.90 :
: 39.2* : -.0025 .0056 26.173 .00 : .0000 .0125 30.810 .00 : .0044 -.0044 -12.889 -125.45 :

```

* OBSERVED DATA

OBSERVED DATA

```

: DATE 17/02/77 TIME 13:00:00 : DATE 17/02/77 TIME 14:00:00 : DATE 17/02/77 TIME 15:00:00 :
: WEATHER : WEATHER : WEATHER :
: TEMP DEG C 10.5 : TEMP DEG C 11.7 : TEMP DEG C 13.3 :
: DEW POINT DEG C -5.5 : DEW POINT DEG C -4.4 : DEW POINT DEG C -6.1 :
: VISIBILITY (MI) 70 : VISIBILITY (MI) 70 : VISIBILITY (MI) 70 :
: CLD (TENTHS) :LOW MID 4 HI 10 TOTL 10 :LOW MID 4 HI 10 TOTL 10 :LOW MID 4 HI 10 TOTL 10 :
: CLD HT (M) :LOW MID 4268 HI 7622 :LOW MID 4268 HI 7622 :LOW MID 4268 HI 7622 :
: EXPONENTS : A = -.25 B = .10 P = .07 : A = .05 R = .40 P = .14 : A = -.09 B = .18 P = .05 :
: NET RADIATION : 21.77 MW/CM2 : 23.57 MW/CM2 : 13.40 MW/CM2 :
: RICHARDSON NO.: (4M)-1.03 (8M)-3.36 (16M)-9.38 : (4M) -.39 (8M)-1.06 (16M)-2.04 : (4M) -.98 (8M)-3.03 (16M)-6.79 :
: (1/L)*10 : (39.192M)***** (OBSERVED DATA): (39.192M)***** (OBSERVED DATA): (39.192M)***** (OBSERVED DATA):
: USTAR : (4M)-2.76 (8M)-4.42 (16M)-6.15 : (4M)-1.06 (8M)-1.41 (16M)-1.35 : (4M)-2.61 (8M)-3.99 (16M)-4.46 :
: (4M).0971 (8M).1015 (16M).1068 : (4M).1157 (8M).1201 (16M).1226 : (4M).1982 (8M).2021 (16M).2004 :

```

```

: HEIGHT (M) : (DEG) (M/S) (C) TEMP SGA SGE : WD SGA SGE : WS TEMP SGA SGE : WS TEMP SGA SGE :
: 1. : : : 10.12 : : : 12.76 : : : 13.34 : : :
: 2. : 299. : -90 10.13 21.5 : : 302. : 1.15 12.71 18.1 : : 349. : 1.83 13.24 10.7 :
: 4. : 294. : .99 10.07 20.7 : : 295. : 1.36 12.57 16.4 : : 339. : 2.05 13.06 9.3 :
: 8. : 292. : 1.02 9.96 19.3 14.9: 301. : 1.43 12.41 16.3 10.3: 346. : 2.15 12.92 7.4 7.3:
: 16. : 281. : 1.10 9.85 10.7 15.9: 299. : 1.52 12.30 17.0 14.4: 336. : 2.22 12.87 6.9 9.4:
: 32. : 275. : 1.15 9.64 10.4 16.3: 304. : 1.79 12.05 19.5 16.8: 336. : 2.18 12.67 7.5 9.2:
: 48. : 290. : 1.13 9.41 12.0 18.3: 314. : 1.84 11.90 20.1 22.1: 346. : 2.22 12.45 8.4 11.4:

```

LEAST SQUARES FITTED DATA

```

: HEIGHT (M) : WS TEMP SGA SGE : WD SGA SGE : WS TEMP SGA SGE : WS TEMP SGA SGE :
: 1.0 : : .88 10.12 27.2 12.0 : : 1.07 12.71 16.0 4.5 : : 1.86 13.23 10.3 5.4 :
: 2.0 : : .92 10.10 22.9 12.9 : : 1.18 12.68 16.5 6.0 : : 1.92 13.20 9.6 6.1 :
: 4.0 : : .97 10.07 19.2 13.8 : : 1.30 12.61 17.0 7.9 : : 2.00 13.15 9.0 6.9 :
: 8.0 : : 1.02 9.99 16.2 14.8 : : 1.43 12.49 17.6 10.4 : : 2.07 13.04 8.5 7.9 :
: 16.0 : : 1.08 9.86 13.6 15.9 : : 1.58 12.29 18.2 13.7 : : 2.15 12.86 8.0 8.9 :
: 32.0 : : 1.13 9.62 11.4 17.0 : : 1.75 12.01 18.8 18.1 : : 2.23 12.60 7.5 10.1 :
: 48.0 : : 1.17 9.42 10.3 17.7 : : 1.85 11.92 19.1 21.2 : : 2.28 12.48 7.2 10.9 :

```

```

: DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI :
: 4.0 : : .0166 -.0083 -.485 -.13 : : .0427 -.0207 -.673 -.19 : : .0243 -.0169 -.232 -.03 :
: 8.0 : : .0087 -.0074 -1.572 -.76 : : .0235 -.0172 -1.833 -1.92 : : .0126 -.0141 -.720 -.16 :
: 16.0 : : .0046 -.0057 -4.352 -5.54 : : .0130 -.0101 -3.530 -9.06 : : .0065 -.0085 -1.612 -.99 :
: 39.2* : : -.0012 -.0044 -17.892-128.56 : : .0031 .0006 1.004 .00 : : .0025 -.0038 -4.089 -6.90 :

```

* OBSERVED DATA

OBSERVED DATA

```

: DATE 17/02/77 TIME 16:00:00 : DATE 17/02/77 TIME 17:00:00 : DATE 17/02/77 TIME 18:00:00 :
: WEATHER : WEATHER : WEATHER :
: TEMP DEG C 13.3 : TEMP DEG C 12.8 : TEMP DEG C 11.1 :
: DEW POINT DEG C -5.0 : DEW POINT DEG C -4.4 : DEW POINT DEG C -5.0 :
: VISIBILITY (MI) 70 : VISIBILITY (MI) 85 : VISIBILITY (MI) 85 :
: CLD (TENTHS) :LOW MID HI -10 TOTL 10 :LOW MID HI -8 TOTL 8 :LOW MID HI -6 TOTL 6 :
: CLD HT (M) :LOW MID HI 7622 :LOW MID HI 7622 :LOW MID HI 7622 :
: EXPONENTS : A= -.18 B= .02 P= .08 : A= .00 B= .15 P= .18 : A= -.07 B= .79 P= .19 :
: NET RADIATION : 7.28 MW/CM2 : -1.81 MW/CM2 : -7.28 MW/CM2 :
: RICHARDSON NO.: (4M) -.43 (8M) -1.33(16M)-3.26 : (4M) .81 (8M) 1.98(16M) 2.70 : (4M) .36* (8M) 4.38(16M) 7.32 :
: (1/L)*10 : (39.192M)***** (OBSERVED DATA): (39.192M)***** (OBSERVED DATA): (39.192M)***** (OBSERVED DATA):
: (4M)-1.17 (8M)-1.77 (16M)-2.14: (4M)26.87 (8M)75.75 (16M)70.02: (4M)5.86* (8M)***** (16M)*****:
: USTAR : (4M).1851 (8M).1870 (16M).1889: (4M).0111 (8M).0177 (16M).0210: (4M).058* (8M).0088 (16M).0061:
:
: WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE :
: HEIGHT (M) : (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) :
: 1. : 13.54 : 359. : 1.89 13.52 13.5 : 321. : .43 12.77 8.9 : 210. : 1.10 9.53 11.6 :
: 2. : 349. : 2.08 13.36 13.0 : 311. : .62 12.75 6.3 : 214. : 1.67 10.50 7.9 :
: 4. : 356. : 2.22 13.21 12.6 : 8.8: 310. : .56 12.71 6.8 : 5.9: 221. : 2.27 11.87 4.9 :
: 8. : 347. : 2.35 13.14 11.6 : 9.9: 303. : .69 12.78 4.9 : 8.9: 215. : 2.25 12.41 5.8 :
: 16. : 345. : 2.42 12.88 9.1 : 8.9: 304. : .78 12.55 6.2 : 6.3: 209. : 2.17 12.50 8.1 :
: 32. : 358. : 2.40 12.65 7.4 : 9.5: 321. : .82 12.35 10.3 : 9.2: 212. : 2.17 12.23 8.2 :
: 48. :

```

LEAST SQUARES FITTED DATA

```

: WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE :
: HEIGHT (M) : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) :
: 1.0 : 1.85 13.49 16.6 8.8 : .41 12.72 7.0 4.7 : 1.20 9.38 8.8 .1 :
: 2.0 : 1.95 13.46 14.7 8.9 : .47 12.73 7.0 5.2 : 1.37 9.64 8.4 .1 :
: 4.0 : 2.06 13.41 13.0 9.0 : .53 12.73 7.0 5.8 : 1.56 10.12 8.0 .2 :
: 8.0 : 2.17 13.31 11.6 9.1 : .60 12.74 7.0 6.4 : 1.78 10.98 7.6 .4 :
: 16.0 : 2.29 13.12 10.2 9.2 : .68 12.72 7.0 7.1 : 2.02 12.28 7.2 .7 :
: 32.0 : 2.41 12.84 9.1 9.3 : .77 12.60 7.0 7.9 : 2.31 13.22 6.9 1.3 :
: 48.0 : 2.48 12.67 8.4 9.4 : .83 12.34 7.0 8.4 : 2.49 11.95 6.7 1.8 :
:
: DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI :
: 4.0 : .0361 -.0164 -.212 -.07 : .0223 .0118 2.297 .00 : .0679 .2333 5.301 .00 :
: 8.0 : .0190 -.0142 -.659 -.28 : .0126 .0092 5.581 .00 : .0387 .1900 13.273 .00 :
: 16.0 : .0100 -.0096 -1.608 -1.63 : .0072 .0040 7.622 .00 : .0220 .1035 22.191 .00 :
: 39.2* : -.0013 -.0044 -3.962 -6.31 : .0025 -.0025 -20.690-170.83 : .0000 -.0069 -7.696 .00 :

```

* OBSERVED DATA

OBSERVED DATA

| | DATE 17/02/77 | TIME 19:00:00 | DATE 17/02/77 | TIME 20:00:00 | DATE 17/02/77 | TIME 21:00:00 | | | | | | | | | | | | |
|----------------|-----------------|---------------|-----------------|---------------|-----------------|-----------------|-----------|--------|-----------------|--------|-------|--------|-------|--------|-------|--------|-------|--------|
| CLD (TENTHS) | WEATHER | TEMP DEG C | 6.1 | TEMP DEG C | 4.4 | TEMP DEG C | 0.5 | | | | | | | | | | | |
| CLD HT (M) | DEW POINT DEG C | -7.2 | DEW POINT DEG C | -7.8 | DEW POINT DEG C | -10.5 | | | | | | | | | | | | |
| EXPONENTS | VISIBILITY (MI) | 50 | VISIBILITY (MI) | 20 | VISIBILITY (MI) | 20 | | | | | | | | | | | | |
| NET RADIATION | LOW | MID | HI | 4:LOW | MID | HI | -1 TOTL | | | | | | | | | | | |
| RICHARDSON NO. | 7622 | HI | 7622 | HI | 7622 | HI | 7622 | | | | | | | | | | | |
| (1/L)*10 | A= | -0.23 | B= | .15 | A= | -0.16 | B= | .09 | | | | | | | | | | |
| USTAR | (4M) | 2.03 | (8M) | 5.55 | (16M) | 11.45 | (4M) | 1.27 | (8M) | 2.22 | (16M) | 40.57 | | | | | | |
| | (39.192M) | 1.07 | (OBSERVED DATA) | (39.192M) | 12.13 | (OBSERVED DATA) | (39.192M) | .46 | (OBSERVED DATA) | (4M) | 13.8* | (8M) | 95.6* | (16M) | ***** | | | |
| | (4M) | 0.0210 | (8M) | 0.0092 | (16M) | 0.0051 | (4M) | 0.021* | (8M) | 0.0000 | (16M) | 0.0000 | (4M) | 0.059* | (8M) | 0.026* | (16M) | 0.0000 |
| HEIGHT (M) | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE | | | |
| 1. | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | | | |
| 2. | | 276. | 1.73 | 5.87 | 11.9 | | 45. | .99 | 5.26 | 18.8 | | 109. | 1.67 | 1.75 | 18.6 | | | |
| 4. | | 269. | 2.30 | 7.44 | 8.7 | | 38. | 1.42 | 6.79 | 17.0 | | 112. | 2.23 | 3.66 | 14.3 | | | |
| 8. | | 273. | 2.67 | 8.77 | 7.5 | | 1.9: | 43. | 1.61 | 7.52 | 18.2 | | 4.3: | 129. | 5.58 | 9.8 | .9: | |
| 16. | | 258. | 2.27 | 9.61 | 7.4 | | 3.1: | 31. | 1.53 | 8.06 | 18.9 | | 7.6: | 122. | 3.04 | 7.00 | 7.0 | .9: |
| 32. | | 236. | 2.60 | 10.37 | 8.9 | | 3.0: | 21. | 1.21 | 8.34 | 32.0 | | 14.0: | 104. | 2.82 | 8.65 | 8.8 | 1.2: |
| 48. | | 219. | 3.35 | 11.30 | 3.9 | | 2.7: | 356. | 1.04 | 8.81 | 48.9 | | 24.5: | 100. | 2.11 | 8.91 | 13.7 | 2.9: |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE |
|------------|-------|--------|--------|-------|--------|--------|---------|-------|--------|--------|--------|------|-------|-------|
| | (M/S) | (C) | (DEG) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) |
| 1.0 | 1.71 | 5.50 | 13.2 | 1.5 | 1.29 | 5.27 | 12.0 | .6 | 1.92 | 1.66 | 16.7 | .2 | | |
| 2.0 | 1.89 | 5.83 | 11.3 | 1.7 | 1.29 | 5.50 | 14.6 | 1.1 | 2.05 | 2.11 | 14.9 | .3 | | |
| 4.0 | 2.10 | 6.46 | 9.6 | 1.9 | 1.28 | 5.93 | 17.8 | 2.1 | 2.19 | 2.96 | 13.4 | .5 | | |
| 8.0 | 2.33 | 7.62 | 8.2 | 2.2 | 1.28 | 6.71 | 21.7 | 4.1 | 2.34 | 4.50 | 12.0 | .7 | | |
| 16.0 | 2.59 | 9.49 | 7.0 | 2.5 | 1.28 | 7.95 | 26.3 | 7.9 | 2.50 | 6.97 | 10.7 | 1.1 | | |
| 32.0 | 2.87 | 11.40 | 5.9 | 2.9 | 1.27 | 9.11 | 32.1 | 15.3 | 2.66 | 9.44 | 9.6 | 1.6 | | |
| 48.0 | 3.05 | 10.89 | 5.4 | 3.1 | 1.27 | 8.51 | 35.9 | 22.5 | 2.77 | 8.60 | 9.0 | 2.1 | | |
| | DU/DZ | DTM/DZ | BU*100 | RI | DU/DZ | DTM/DZ | BU*100 | RI | DU/DZ | DTM/DZ | BU*100 | RI | | |
| 4.0 | .0731 | .3092 | 3.931 | .00 | -.0016 | .2126 | 7.238 | .00 | .0478 | .4092 | 4.847 | .00 | | |
| 8.0 | .0406 | .2619 | 10.768 | .00 | -.0008 | .1783 | 24.391 | .00 | .0255 | .3446 | 14.244 | .00 | | |
| 16.0 | .0225 | .1674 | 22.198 | .00 | -.0004 | .1097 | 60.210 | .00 | .0136 | .2156 | 30.989 | .00 | | |
| 39.2* | .0469 | .0681 | 41.862 | .00 | -.0106 | .0394 | 163.718 | .00 | -.0444 | .0262 | 22.408 | .00 | | |

* OBSERVED DATA

| | DATE 17/02/77 | TIME 22:00:00 | DATE 17/02/77 | TIME 23:00:00 | DATE 18/02/77 | TIME 00:00:00 | |
|----------------|---|--------------------------|---------------------------|---------------|--------------------|---------------|--|
| CLD (TENTHS) | WEATHER | | WEATHER | | WEATHER | | |
| CLD HT (M) | TEMP DEG C | -1.1 | TEMP DEG C | -1.1 | TEMP DEG C | -3.9 | |
| EXPOSURE | DEW POINT DEG C | -9.4 | DEW POINT DEG C | -9.9 | DEW POINT DEG C | -10.5 | |
| NET RADIATION | VISIBILITY (MI) 20 | | VISIBILITY (MI) 20 | | VISIBILITY (MI) 20 | | |
| RICHARDSON NO. | LOW MID HI | TOTL 0 | LOW MID HI | TOTL 0 | LOW MID HI | TOTL 0 | |
| (L/LJ)*10 | LOW MID HI | LOW MID HI | LOW MID HI | LOW MID HI | LOW MID HI | LOW MID HI | |
| USTAR | A = -2.0 B = .12 P = .31 | A = -.05 R = .37 P = .36 | A = -.08 R = -.25 P = .46 | | | | |
| | -6.91 MW/CM2 | -6.56 MW/CM2 | -5.79 MW/CM2 | | | | |
| | (4M) .41 (8M) .87(16M) 1.31 : (4M) .43 (8M) .91(16M) 1.59 : (4M) 2.92 (8M) 5.45(16M) 8.43 : | | | | | | |
| | (39.192M) .93 (OBSERVED DATA) : (39.192M) .00 (OBSERVED DATA) : (39.192M)***** (OBSERVED DATA) : | | | | | | |
| | (4M) 7.28 (8M) 15.30 (16M) 16.86 : (4M) 7.92 (8M) 16.56 (16M) 24.57 : (4M)***** (8M)***** (16M)***** : | | | | | | |
| | (4M) .0763 (8M) .0556 (16M) .0496 : (4M) .0663 (8M) .0498 (16M) .0407 : (4M) .0037 (8M) .0028 (16M) .0026 : | | | | | | |
| HEIGHT (M) | WD WS TEMP SGA SGE : WD WS TEMP SGA SGE : WD WS TEMP SGA SGE : | | | | | | |
| 1. | : 122. : 1.63 : .96 : 16.5 : 107. : 1.52 : -.47 : 8.6 : 73. : .33 : -3.54 : 29.9 : | | | | | | |
| 2. | : 114. : 2.31 : 1.68 : 8.1 : 98. : 2.07 : -.16 : 7.6 : 28. : .73 : -2.14 : 14.8 : | | | | | | |
| 4. | : 119. : 3.48 : 3.17 : 4.6 : 104. : 2.80 : .70 : 5.2 : 58. : .71 : -.87 : 12.9 : | | | | | | |
| 8. | : 119. : 4.47 : 5.81 : 4.7 : 113. : 4.21 : 4.09 : 6.8 : 97. : .57 : 1.28 : 25.0 : | | | | | | |
| 16. | : 120. : 4.28 : 5.90 : 7.0 : 129. : 4.48 : 7.23 : 6.6 : 153. : 1.65 : 2.39 : 13.6 : | | | | | | |
| 32. | : 133. : 4.39 : 5.76 : 7.6 : 151. : 4.48 : 7.68 : 7.2 : 136. : 1.74 : 4.32 : 19.7 : | | | | | | |
| 48. | | | | | | | |

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1.0 | 1.52 | .66 | 11.8 | 1.5 | 1.27 | -1.13 | 7.8 | .9 | .27 | -1.96 | 22.3 | 6.3 |
| 2.0 | 1.89 | 1.03 | 10.2 | 1.6 | 1.64 | -.74 | 7.5 | 1.1 | .37 | -1.70 | 21.1 | 5.3 |
| 4.0 | 2.35 | 1.74 | 8.9 | 1.8 | 2.10 | .03 | 7.3 | 1.5 | .51 | -1.20 | 19.9 | 4.4 |
| 8.0 | 2.92 | 3.02 | 7.8 | 1.9 | 2.70 | 1.46 | 7.0 | 1.9 | .71 | -.27 | 18.8 | 3.7 |
| 16.0 | 3.64 | 5.01 | 6.8 | 2.1 | 3.47 | 3.88 | 6.8 | 2.5 | .97 | 1.31 | 17.8 | 3.1 |
| 32.0 | 4.53 | 6.74 | 5.9 | 2.2 | 4.46 | 6.98 | 6.6 | 3.2 | 1.33 | 3.36 | 16.8 | 2.6 |
| 48.0 | 5.14 | 5.48 | 5.4 | 2.4 | 5.16 | 7.79 | 6.4 | 3.8 | 1.60 | 3.93 | 16.3 | 2.3 |
| | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI |
| 4.0 | .1724 | .3406 | 3.514 | .00 | .1775 | .3753 | 4.867 | .00 | .0553 | .2481 | 54.341 | .00 |
| 8.0 | .1072 | .2821 | 7.489 | .00 | .1140 | .3303 | 10.329 | .00 | .0380 | .2192 | 101.282 | .00 |
| 16.0 | .0667 | .1651 | 11.252 | .00 | .0732 | .2404 | 18.058 | .00 | .0261 | .1612 | 156.864 | .00 |
| 39.2* | .0069 | .0013 | .360 | .00 | .0000 | .0381 | 10.190 | .00 | .0056 | .1306 | 248.911 | .00 |

A-24

OBSERVED DATA

| | DATE 18/02/77 | TIME 01:00:00 | DATE 18/02/77 | TIME 02:00:00 | DATE 18/02/77 | TIME 03:00:00 | |
|----------------|-----------------|-----------------------|-----------------|-----------------------|-----------------|----------------------|------------|
| CLD (TENTHS) | WEATHER | TEMP DEG C | -2.8 | WEATHER | TEMP DEG C | -3.9 | |
| CLD HT (M) | DEW POINT DEG C | -11.1 | DEW POINT DEG C | -11.7 | DEW POINT DEG C | -13.0 | |
| EXPOSURE | VISIBILITY (MI) | 25 | VISIBILITY (MI) | 25 | VISIBILITY (MI) | 25 | |
| NET RADIATION | LOW 0 MID 0 HI | TOTL 0 | LOW 0 MID 0 HI | TOTL 0 | LOW 0 MID 0 HI | TOTL 0 | |
| RICHARDSON NO. | LOW | MID | HI | LOW | MID | HI | |
| (L/L)*10 | A = -0.13 | B = -0.50 | P = .13 | A = -0.18 | B = -0.44 | P = .19 | |
| USTAR | (4M) | .42*(8M) | 12.37(16M) | 29.78 | (4M) | .52*(8M) | 1.49(16M) |
| | (39.192M) | ***** (OBSERVED DATA) | (39.192M) | 97.55 (OBSERVED DATA) | (39.192M) | 2.63 (OBSERVED DATA) | |
| | (4M) | 7.92*(8M) | ***** (16M) | ***** (4M) | 11.6*(8M) | 43.5*(16M) | ***** (4M) |
| | (4M) | .058*(8M) | .0034 (16M) | .0016 (16M) | .035*(8M) | .0065 (16M) | .046*(8M) |

| HEIGHT (M) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|
| 1. | | | -3.87 | | | | | -4.94 | | | | | -6.39 | | |
| 2. | 77. | 1.22 | -3.54 | 13.2 | | 159. | 1.44 | -4.30 | 11.5 | | 236. | .88 | -6.01 | 10.8 | |
| 4. | 65. | 1.83 | -2.75 | 12.1 | | 161. | 2.32 | -1.67 | 7.3 | | 219. | 1.41 | -5.15 | 11.5 | |
| 8. | 81. | 2.50 | -.38 | 8.6 | .8 | 158. | 2.75 | -.15 | 4.9 | .5 | 204. | 2.31 | -2.57 | 8.4 | 1.1 |
| 16. | 75. | 2.17 | .67 | 7.5 | 1.3 | 156. | 3.34 | 1.81 | 7.0 | .5 | 195. | 3.14 | .39 | 6.9 | 1.4 |
| 32. | 82. | 2.08 | 2.13 | 10.5 | 1.4 | 150. | 2.86 | 2.66 | 3.8 | 1.0 | 195. | 2.34 | 3.98 | 2.6 | 1.1 |
| 48. | 87. | 2.05 | 3.75 | 8.3 | 2.2 | 137. | 2.78 | 3.60 | 7.3 | 1.0 | 169. | 1.82 | 5.08 | 7.7 | 2.2 |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|
| 1.0 | | | -3.52 | 13.3 | | | | -3.98 | 10.1 | | | | -6.43 | 14.6 | |
| 2.0 | 1.42 | 1.55 | -3.21 | 12.2 | .3 | 1.60 | 1.83 | -3.54 | 8.9 | .2 | 1.20 | 1.01 | -5.90 | 11.9 | .7 |
| 4.0 | 1.70 | 2.60 | -2.60 | 11.2 | .6 | 2.08 | 2.69 | -2.69 | 7.9 | .3 | 1.43 | 1.20 | -4.87 | 9.7 | .8 |
| 8.0 | 1.86 | -1.47 | 10.2 | | .8 | 2.36 | -1.14 | 6.9 | | .5 | 1.70 | 1.70 | -2.96 | 7.9 | 1.1 |
| 16.0 | 2.03 | .45 | 9.4 | 1.2 | 1.2 | 2.69 | 1.34 | 6.1 | 6.1 | .6 | 2.03 | 2.03 | .25 | 6.5 | 1.3 |
| 32.0 | 2.22 | 2.89 | 8.6 | 1.6 | 1.6 | 3.06 | 3.87 | 5.4 | 5.4 | .9 | 2.42 | 2.42 | 4.24 | 5.3 | 1.6 |
| 48.0 | 2.34 | 3.47 | 8.1 | 2.0 | 2.0 | 3.30 | 3.15 | 5.0 | 5.0 | 1.0 | 2.68 | 2.68 | 4.99 | 4.7 | 1.7 |
| | DU/DZ | DT/DZ | BU*100 | RI | | DU/DZ | DT/DZ | BU*100 | RI | | DU/DZ | DT/DZ | BU*100 | RI | |
| 4.0 | .0507 | .3001 | 6.033 | .00 | .00 | .0897 | .4095 | 5.499 | .00 | .00 | .0840 | .5002 | 14.330 | .00 | .00 |
| 8.0 | .0277 | .2638 | 17.664 | .00 | .00 | .0511 | .3460 | 14.270 | .00 | .00 | .0501 | .4368 | 34.982 | .00 | .00 |
| 16.0 | .0152 | .1913 | 42.541 | .00 | .00 | .0290 | .2189 | 27.633 | .00 | .00 | .0298 | .3100 | 69.080 | .00 | .00 |
| 39.2* | -.0019 | .1113 | 142.061 | .00 | .00 | -.0050 | .0687 | 46.971 | .00 | .00 | -.0325 | .0788 | 96.237 | .00 | .00 |

* OBSERVED DATA

| | DATE 18/02/77 | TIME 04:00:00 | DATE 18/02/77 | TIME 05:00:00 | DATE 18/02/77 | TIME 06:00:00 |
|---------------|------------------|-----------------|------------------|-----------------|------------------|-----------------|
| | WEATHER | | WEATHER | | WEATHER | |
| | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | |
| | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | |
| | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | |
| CLD (TENTHS) | LOW 0 MID 0 HI 2 | TOTL 2 | LOW 0 MID 0 HI 2 | TOTL 2 | LOW 0 MID 0 HI 2 | TOTL 0 |
| CLD HT (M) | LOW MID | HI 7622 | LOW MID | HI 7622 | LOW MID | HI |
| EXPONENTS | A= .44 | B= .15 | P= -.39 | A= -.04 | R= -.05 | P= .03 |
| NET RADIATION | | | | | | |
| | | | | | | |
| RICARDSON NO. | (4M) 1.04 | (8M) 6.24 | (16M) 31.00 | (4M) .34 | (8M) .06 | (16M) .0000 |
| | (39.192M) 9.88 | (OBSERVED DATA) | (39.192M) 92.06 | (OBSERVED DATA) | (39.192M) .25 | (OBSERVED DATA) |
| (1/L)*10 | (4M) 42.89 | (16M) .0000 | (4M) 5.05 | (8M) .0000 | (16M) .0000 | (4M) 1.17 |
| USTAR | (4M) .0237 | (8M) .0037 | (16M) .0006 | (4M) .061 | (8M) .0000 | (16M) .0000 |

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1.0 | 2.35 | -5.85 | 7.1 | 1.4 | 1.36 | -5.73 | 6.6 | 1.8 | 1.89 | -7.19 | 6.7 | 1.1 |
| 2.0 | 1.80 | -5.38 | 9.6 | 1.5 | 1.39 | -5.23 | 6.4 | 1.8 | 2.03 | -6.81 | 6.3 | 1.2 |
| 4.0 | 1.37 | -4.47 | 13.1 | 1.7 | 1.41 | -4.28 | 6.2 | 1.7 | 2.18 | -6.08 | 6.0 | 1.3 |
| 8.0 | 1.05 | -2.77 | 17.7 | 1.9 | 1.44 | -2.52 | 6.0 | 1.6 | 2.35 | -4.71 | 5.7 | 1.6 |
| 16.0 | .80 | .12 | 24.0 | 2.1 | 1.47 | .46 | 5.8 | 1.6 | 2.52 | -2.38 | 5.4 | 1.1 |
| 32.0 | .61 | 3.87 | 32.6 | 2.3 | 1.50 | 4.17 | 5.7 | 1.5 | 2.71 | .67 | 5.2 | 2.0 |
| 48.0 | .52 | 4.92 | 38.9 | 2.4 | 1.52 | 4.91 | 5.6 | 1.5 | 2.82 | 1.55 | 5.0 | 2.8 |
| | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | RU*100 | RI |
| 4.0 | -.1251 | .4449 | 13.809 | .00 | .0097 | .4629 | 13.500 | .00 | .0519 | .3608 | 4.438 | .00 |
| 8.0 | -.0477 | .3922 | 83.102 | .00 | .0050 | .4048 | 45.013 | .00 | .0279 | .3186 | 13.523 | .00 |
| 16.0 | -.0182 | .2867 | 412.985 | .00 | .0025 | .2886 | 121.828 | .00 | .0150 | .2341 | 34.179 | .00 |
| 39.2* | -.0194 | .10501879 | 170 | .00 | -.0056 | .0825 | 245.655 | .00 | -.1137 | .0912 | 79.416 | .00 |

A-26

OBSERVED DATA

| | DATE 18/02/77 | TIME 07:00:00 | DATE 18/02/77 | TIME 08:00:00 | DATE 18/02/77 | TIME 09:00:00 | |
|-----------------------|---|-----------------------|---|-----------------------|---|-----------------------|-----------------------------------|
| WEATHER | WEATHER | WEATHER | WEATHER | WEATHER | WEATHER | WEATHER | |
| TEMP DEG C | -6.1 | TEMP DEG C | -5.6 | TEMP DEG C | -1.1 | TEMP DEG C | -1.1 |
| DEW POINT DEG C | -12.2 | DEW POINT DEG C | -10.6 | DEW POINT DEG C | -7.8 | DEW POINT DEG C | -7.8 |
| VISIBILITY (MI) | 30 | VISIBILITY (MI) | 85 | VISIBILITY (MI) | 85 | VISIBILITY (MI) | 85 |
| LOW 0 MID 0 HI 0 TOTL | 0 0 0 0 | LOW 0 MID 0 HI 0 TOTL | 0 0 0 0 | LOW 0 MID 0 HI 0 TOTL | 0 0 0 0 | LOW 0 MID 0 HI 0 TOTL | 0 0 0 0 |
| CLD (TENTHS) | 0 | CLD (TENTHS) | 0 | CLD (TENTHS) | 0 | CLD (TENTHS) | 0 |
| CLD HT (M) | 0 | CLD HT (M) | 0 | CLD HT (M) | 0 | CLD HT (M) | 0 |
| EXPONENTS | A = -.58 B = -.25 P = .25 | EXPONENTS | A = .09 B = -.07 P = -.10 | EXPONENTS | A = -.10 B = -.42 P = .01 | EXPONENTS | A = -.10 B = -.42 P = .01 |
| NET RADIATION | -5.44 MW/CM2 | NET RADIATION | -0.00 MW/CM2 | NET RADIATION | 10.89 MW/CM2 | NET RADIATION | 10.89 MW/CM2 |
| RICHARDSON NO. | (4M) 7.53 (8M) 18.37 (16M) 35.69 | RICHARDSON NO. | (4M) .76 (8M) 33.22 (16M) ***** | RICHARDSON NO. | (4M) -2.68 (8M) ***** (16M) ***** | RICHARDSON NO. | (4M) -2.68 (8M) ***** (16M) ***** |
| (1/L)*10 | (39.192M) .75 (OBSERVED DATA) | (1/L)*10 | (39.192M) 6.48 (OBSERVED DATA) | (1/L)*10 | (39.192M) ***** (OBSERVED DATA) | (1/L)*10 | (39.192M) ***** (OBSERVED DATA) |
| USTAR | (4M) ***** (8M) ***** (16M) ***** | USTAR | (4M) 23.6 (8M) ***** (16M) ***** | USTAR | (4M) -7.12 (8M) ***** (16M) ***** | USTAR | (4M) -7.12 (8M) ***** (16M) ***** |
| | (4M) .0023 (8M) .0011 (16M) .0007 | | (4M) .035 (8M) .0010 (16M) .0000 | | (4M) .023 (8M) .0000 (16M) .0000 | | (4M) .023 (8M) .0000 (16M) .0000 |
| HEIGHT (M) | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | HEIGHT (M) | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | HEIGHT (M) | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | HEIGHT (M) | WD WS TEMP SIGA SIGE : |
| 1. | 87. : .62 -6.46 58.8 | 1. | 84. : 1.47 -5.73 11.6 | 1. | 85. : 1.06 -0.91 10.5 | 1. | 85. : 1.06 -0.91 10.5 |
| 2. | 109. : .65 -5.81 60.3 | 2. | 75. : 1.61 -5.75 11.3 | 2. | 75. : 1.16 -1.07 7.5 | 2. | 75. : 1.16 -1.07 7.5 |
| 4. | 169. : .84 -4.87 47.5 | 4. | 77. : 1.81 -5.39 11.2 | 4. | 72. : 1.17 -1.12 7.6 | 4. | 72. : 1.17 -1.12 7.6 |
| 8. | 208. : 2.10 -1.27 10.3 | 8. | 57. : 1.68 -3.35 43.9 | 8. | 63. : 1.18 -1.16 7.6 | 8. | 63. : 1.18 -1.16 7.6 |
| 16. | 180. : 1.55 1.32 14.0 | 16. | 2. : 1.02 1.49 20.5 | 16. | 39. : 1.09 2.92 4.9 | 16. | 39. : 1.09 2.92 4.9 |
| 32. | 181. : .88 1.75 14.5 | 32. | 42. : 1.27 2.04 8.1 | 32. | 32. : 1.15 3.70 9.3 | 32. | 32. : 1.15 3.70 9.3 |
| 48. | | 48. | | 48. | | 48. | |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------|----------|------------|------------|----------|----------|------------|------------|----------|----------|------------|------------|
| 1.0 | .55 | -7.17 | 104.3 | 11.7 | 1.82 | -6.34 | 12.1 | 7.0 | 1.11 | -1.18 | 9.7 | 17.0 |
| 2.0 | .65 | -6.73 | 70.0 | 9.8 | 1.70 | -6.07 | 12.9 | 6.7 | 1.12 | -1.13 | 9.0 | 12.7 |
| 4.0 | .78 | -5.87 | 47.0 | 8.3 | 1.60 | -5.54 | 13.6 | 6.4 | 1.12 | -1.01 | 8.5 | 9.5 |
| 8.0 | .92 | -4.30 | 31.5 | 7.0 | 1.49 | -4.53 | 14.5 | 6.1 | 1.13 | -.75 | 7.9 | 7.1 |
| 16.0 | 1.10 | -1.68 | 21.2 | 5.9 | 1.40 | -2.68 | 15.3 | 5.8 | 1.14 | -1.0 | 7.4 | 5.3 |
| 32.0 | 1.30 | 1.44 | 14.2 | 4.9 | 1.31 | .34 | 16.3 | 5.5 | 1.15 | 1.69 | 6.9 | 3.9 |
| 48.0 | 1.44 | 1.73 | 11.3 | 4.5 | 1.26 | 2.45 | 16.9 | 5.4 | 1.15 | 4.12 | 6.7 | 3.3 |
| | DU/DZ | DTM/DZ | BU*100 | RI | DU/DZ | DTM/DZ | BU*100 | RI | DU/DZ | DTM/DZ | BU*100 | RI |
| 4.0 | .0449 | .4148 | 40.289 | .00 | -.0353 | .2658 | 6.121 | .00 | .0026 | .0734 | 3.354 | .00 |
| 8.0 | .0267 | .3595 | 98.323 | .00 | -.0165 | .2482 | 26.031 | .00 | .0013 | .0861 | 15.499 | .00 |
| 16.0 | .0159 | .2491 | 191.040 | .00 | -.0077 | .2129 | 101.174 | .00 | .0007 | .1114 | 78.946 | .00 |
| 39.2* | -.0419 | .0369 | 129.566 | .00 | .0156 | .0444 | 189.487 | .00 | .0038 | .0587 | 256.406 | .00 |

* OBSERVED DATA

OBSERVED DATA

: DATE 18/02/77 TIME 10:00:00 : DATE 18/02/77 TIME 11:00:00 : DATE 18/02/77 TIME 12:00:00 :
 : WEATHER : WEATHER : WEATHER :
 : TEMP DEG C 3.9 : TEMP DEG C 7.8 : TEMP DEG C 9.4 :
 : DEW POINT DEG C -8.3 : DEW POINT DEG C -7.2 : DEW POINT DEG C -7.2 :
 : VISIBILITY (MI) 70 : VISIBILITY (MI) 70 : VISIBILITY (MI) 70 :
 : : : :
 CLD (TENTHS) :LOW 0 MID 0 HI 2 TOTL 2:LOW 0 MID 0 HI 3 TOTL 3:LOW 0 MID 0 HI 3 TOTL 3:
 CLO HT (M) : : : : : : :
 EXPONENTS : : : : : : :
 : A = -.17 B = .21 P = .08 : A = -.00 R = -.05 P = .05 : A = .11 B = .06 P = .06 :
 NET RADIATION : : : : : : :
 RICHARDSON NO. : (4M)-1.16 (8M)-3.54(16M)-8.38 : (4M)-9.40 (8M)-30.4(16M)-72.8 : (4M)-2.33 (8M)-7.30(16M)-17.9 :
 : (39.192M) : (39.192M)-3.50 (OBSERVED DATA): (39.192M) : (OBSERVED DATA): :
 (1/L)*10 : (4M)-3.09 (8M)-4.66 (16M)-5.50 : (4M)-24.7 (8M)-39.8 (16M)-47.7 : (4M)-6.14 (8M)-9.56 (16M)-11.7 :
 USTAR : (4M).1338 (8M).1397 (16M).1431 : (4M).1353 (8M).1314 (16M).1041 : (4M).1417 (8M).1499 (16M).1584 :

| HEIGHT (M) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|
| 1. | 355. | 1.19 | 4.74 | 23.8 | | 328. | | 7.51 | 39.5 | | 351. | | 9.38 | 31.0 | |
| 2. | 345. | 1.34 | 4.50 | 19.8 | | 317. | | 7.42 | 37.6 | | 341. | | 9.25 | 26.9 | |
| 4. | 355. | 1.44 | 4.36 | 18.1 | 12.6 | 314. | | 7.23 | 30.0 | 22.0 | 295. | | 1.33 | 8.95 | |
| 8. | 345. | 1.52 | 4.20 | 15.6 | 13.6 | 314. | | 7.04 | 22.3 | 30.7 | 334. | | 1.37 | 8.86 | 20.8 |
| 16. | 340. | 1.53 | 4.01 | 15.1 | 15.7 | 309. | | 6.75 | 30.5 | 27.8 | 331. | | 1.38 | 8.61 | 22.5 |
| 32. | 350. | 1.58 | 3.73 | 13.2 | 18.8 | 306. | | 6.58 | 49.5 | 19.7 | 343. | | 1.40 | 8.37 | 24.8 |
| 48. | | | | | | | | | | | | | | | 23.0 |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|---|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|
| 1.0 | 1.17 | 4.66 | 26.0 | 7.9 | | 7.7 | 7.49 | 34.2 | 28.3 | | 1.14 | 9.26 | 31.2 | 16.6 | |
| 2.0 | 1.24 | 4.63 | 23.1 | 9.1 | | .80 | 7.45 | 34.1 | 27.5 | | 1.19 | 9.23 | 29.6 | 17.4 | |
| 4.0 | 1.31 | 4.56 | 20.5 | 10.5 | | .83 | 7.39 | 34.0 | 26.6 | | 1.24 | 9.16 | 28.0 | 18.2 | |
| 8.0 | 1.39 | 4.44 | 18.2 | 12.2 | | .85 | 7.26 | 33.9 | 25.8 | | 1.29 | 9.05 | 26.5 | 19.0 | |
| 16.0 | 1.47 | 4.23 | 16.1 | 14.2 | | .88 | 7.04 | 33.8 | 25.0 | | 1.34 | 8.84 | 25.1 | 19.8 | |
| 32.0 | 1.56 | 3.92 | 14.3 | 16.4 | | .91 | 6.73 | 33.7 | 24.2 | | 1.40 | 8.55 | 23.8 | 20.7 | |
| 48.0 | 1.61 | 3.76 | 13.4 | 17.9 | | .93 | 6.59 | 33.6 | 23.8 | | 1.43 | 8.40 | 23.1 | 21.3 | |
| DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : | | | | | | | | | | | | | | | |
| 4.0 | .0251 | -.0208 | -.679 | -.16 | | .0090 | -.0216 | -1.771 | -.15 | | .0171 | -.0196 | -.714 | -.13 | |
| 8.0 | .0133 | -.0178 | -2.072 | -1.22 | | .0046 | -.0184 | -5.658 | -1.58 | | .0089 | -.0167 | -2.239 | -.84 | |
| 16.0 | .0070 | -.0118 | -4.902 | -7.48 | | .0024 | -.0120 | -13.842 | -27.03 | | .0046 | -.0109 | -5.383 | -4.18 | |
| 39.2* | .0031 | -.0075 | -16.906 | -114.10 | | .0025 | -.0006 | -3.821 | -16.91 | | .0012 | -.0050 | -13.849 | -76.66 | |

* OBSERVED DATA

[illegible][illegible]

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1.0 | 1.62 | 11.51 | 19.0 | 10.6 | 1.65 | 12.70 | 34.0 | 12.2 | 2.00 | 13.33 | 19.6 | 8.7 |
| 2.0 | 1.74 | 11.47 | 18.2 | 11.5 | 1.78 | 12.66 | 28.7 | 12.7 | 2.10 | 13.29 | 18.6 | 9.6 |
| 4.0 | 1.86 | 11.40 | 17.4 | 12.5 | 1.93 | 12.59 | 24.2 | 13.4 | 2.20 | 13.22 | 17.7 | 10.7 |
| 8.0 | 1.99 | 11.26 | 16.7 | 13.5 | 2.08 | 12.45 | 20.4 | 14.0 | 2.31 | 13.08 | 16.9 | 11.8 |
| 16.0 | 2.13 | 11.02 | 16.0 | 14.7 | 2.25 | 12.21 | 17.2 | 14.6 | 2.42 | 12.84 | 16.1 | 13.0 |
| 32.0 | 2.29 | 10.67 | 15.3 | 15.9 | 2.43 | 11.90 | 14.5 | 15.3 | 2.54 | 12.50 | 15.3 | 14.4 |
| 48.0 | 2.38 | 10.50 | 14.9 | 16.7 | 2.54 | 11.80 | 13.2 | 15.8 | 2.61 | 12.35 | 14.9 | 15.3 |
| | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI |
| 4.0 | .0426 | -.0251 | -.400 | -.12 | .0494 | -.0252 | -.372 | -.06 | .0348 | -.0252 | -.286 | -.04 |
| 8.0 | .0228 | -.0216 | -1.201 | -.72 | .0267 | -.0211 | -1.069 | -.71 | .0182 | -.0216 | -.887 | -.39 |
| 16.0 | .0122 | -.0146 | -2.836 | -4.75 | .0144 | -.0129 | -2.247 | -3.81 | .0096 | -.0142 | -2.125 | -1.99 |
| 39.2* | .0019 | -.0100 | -9.909 | -39.55 | -.0038 | -.0019 | -1.659 | -3.02 | -.0013 | -.0056 | -4.520 | -8.21 |

A-29

| | DATE 24/02/77 | TIME 13:00:00 | DATE 24/02/77 | TIME 14:00:00 | DATE 24/02/77 | TIME 15:00:00 |
|----------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| CLD (TENTHS) | WEATHER | | WEATHER | | WEATHER | |
| CLD HT (M) | TEMP DEG C | 3.3 | TEMP DEG C | 3.9 | TEMP DEG C | 3.9 |
| EXPONENTS | DEW POINT DEG C | -12.2 | DEW POINT DEG C | -11.1 | DEW POINT DEG C | -12.2 |
| NET RADIATION | VISIBILITY (MI) | 60 | VISIBILITY (MI) | 50 | VISIBILITY (MI) | 40 |
| RICHARDSON NO. | LOW 8 MID 1 HI TOTAL | 9:LOW 6 MID 3 HI TOTAL | 9:LOW 6 MID 3 HI TOTAL | 9:LOW 8 MID HI TOTAL | 9:LOW 8 MID HI TOTAL | 9:LOW 8 MID HI TOTAL |
| (1/L1)*10 | LOW 1525 MID 3050 HI | LOW 1220 MID 3050 HI | LOW 1220 MID 3050 HI | LOW 1370 MID HI | LOW 1370 MID HI | LOW 1370 MID HI |
| USTAR | A = -.12 B = .09 P = .16 | A = -.08 B = .08 P = .15 | A = -.08 B = .08 P = .15 | A = -.03 B = .04 P = .13 | A = -.03 B = .04 P = .13 | A = -.03 B = .04 P = .13 |
| | 25.33 MW/CM2 | 38.03 MW/CM2 | 38.03 MW/CM2 | 17.37 MW/CM2 | 17.37 MW/CM2 | 17.37 MW/CM2 |
| | (4M) -.06 (8M) -.17 (16M) -.32 | (4M) -.07 (8M) -.19 (16M) -.37 | (4M) -.07 (8M) -.19 (16M) -.37 | (4M) -.06 (8M) -.17 (16M) -.36 | (4M) -.06 (8M) -.17 (16M) -.36 | (4M) -.06 (8M) -.17 (16M) -.36 |
| | (39.192M) -.08 (OBSERVED DATA) | (39.192M) -.06 (OBSERVED DATA) | (39.192M) -.06 (OBSERVED DATA) | (39.192M) -.53 (OBSERVED DATA) | (39.192M) -.53 (OBSERVED DATA) | (39.192M) -.53 (OBSERVED DATA) |
| | (4M) -.19 (8M) -.24 (16M) -.22 | (4M) -.21 (8M) -.27 (16M) -.26 | (4M) -.21 (8M) -.27 (16M) -.26 | (4M) -.18 (8M) -.24 (16M) -.25 | (4M) -.18 (8M) -.24 (16M) -.25 | (4M) -.18 (8M) -.24 (16M) -.25 |
| | (4M).3456 (8M).3488 (16M).3551 | (4M).4449 (8M).4458 (16M).4503 | (4M).4449 (8M).4458 (16M).4503 | (4M).4749 (8M).4693 (16M).4694 | (4M).4749 (8M).4693 (16M).4694 | (4M).4749 (8M).4693 (16M).4694 |
| HEIGHT (M) | WD | WS | TEMP (C) | SIGA (DEG) | SIGA (DEG) | SIGA (DEG) |
| 1. | 308. | 3.66 | 3.09 | 14.4 | 3.25 | 3.25 |
| 2. | 308. | 3.66 | 3.09 | 14.4 | 4.48 | 4.48 |
| 4. | 298. | 4.66 | 2.90 | 13.4 | 4.72 | 4.72 |
| 8. | 305. | 5.02 | 2.55 | 13.4 | 5.95 | 5.95 |
| 16. | 294. | 5.43 | 2.31 | 12.0 | 6.35 | 6.35 |
| 32. | 295. | 5.93 | 2.03 | 10.6 | 6.96 | 6.96 |
| 48. | 305. | 6.57 | 1.81 | 9.8 | 7.34 | 7.34 |
| | | | | | 8.03 | 8.03 |
| | | | | | 6.3 | 6.3 |
| | | | | | 314. | 314. |
| | | | | | 5.2 | 5.2 |
| | | | | | 306. | 306. |
| | | | | | 4.9 | 4.9 |
| | | | | | 317. | 317. |
| | | | | | 5.2 | 5.2 |
| | | | | | 310. | 310. |
| | | | | | 5.95 | 5.95 |
| | | | | | 4.72 | 4.72 |
| | | | | | 4.24 | 4.24 |
| | | | | | 13.4 | 13.4 |
| | | | | | 345. | 345. |
| | | | | | 5.28 | 5.28 |
| | | | | | 3.54 | 3.54 |
| | | | | | 13.4 | 13.4 |
| | | | | | 3.25 | 3.25 |
| | | | | | 13.3 | 13.3 |
| | | | | | 2.90 | 2.90 |
| | | | | | 12.9 | 12.9 |
| | | | | | 5.4 | 5.4 |
| | | | | | 5.0 | 5.0 |
| | | | | | 5.2 | 5.2 |
| | | | | | 12.1 | 12.1 |
| | | | | | 2.30 | 2.30 |
| | | | | | 12.5 | 12.5 |
| | | | | | 12.1 | 12.1 |
| | | | | | 5.9 | 5.9 |

| HEIGHT (M) : | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|--------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1.0 : | 3.48 | 3.12 | 16.1 | 4.1 | 4.55 | 4.30 | 14.7 | 4.3 | 5.01 | 3.56 | 13.7 | 4.8 |
| 2.0 : | 3.89 | 3.06 | 14.8 | 4.3 | 5.04 | 4.20 | 13.9 | 4.6 | 5.48 | 3.49 | 13.4 | 4.9 |
| 4.0 : | 4.36 | 2.94 | 13.7 | 4.6 | 5.58 | 4.03 | 13.2 | 4.8 | 5.99 | 3.36 | 13.1 | 5.0 |
| 8.0 : | 4.88 | 2.71 | 12.6 | 4.9 | 6.19 | 3.70 | 12.4 | 5.1 | 6.55 | 3.10 | 12.8 | 5.2 |
| 16.0 : | 5.47 | 2.34 | 11.6 | 5.2 | 6.86 | 3.17 | 11.8 | 5.4 | 7.17 | 2.68 | 12.5 | 5.3 |
| 32.0 : | 6.12 | 1.90 | 10.7 | 5.5 | 7.60 | 2.59 | 11.1 | 5.7 | 7.84 | 2.17 | 12.2 | 5.4 |
| 48.0 : | 6.54 | 1.86 | 10.2 | 5.7 | 8.07 | 2.63 | 10.8 | 5.8 | 8.26 | 2.10 | 12.1 | 5.5 |
| : | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI |
| 4.0 : | .1646 | -.0477 | -.143 | -.06 | .1915 | -.0736 | -.134 | -.04 | .1789 | -.0553 | -.087 | -.03 |
| 8.0 : | .0922 | -.0398 | -.380 | -.17 | .1361 | -.0612 | -.362 | -.19 | .0978 | -.0465 | -.246 | -.09 |
| 16.0 : | .0516 | -.0240 | -.732 | -.81 | .0588 | -.0366 | -.706 | -.75 | .0535 | -.0290 | -.513 | -.36 |
| 39.2* : | .0400 | -.0038 | -.531 | -.87 | .0431 | -.0031 | -.291 | -.27 | .0194 | -.0056 | -.492 | -.53 |

A-30

OBSERVED DATA

| | DATE 24/02/77 | TIME 16:00:00 | DATE 24/02/77 | TIME 17:00:00 | DATE 24/02/77 | TIME 18:00:00 | |
|-----------------|--|-----------------|--|-----------------|--|-----------------|---|
| WEATHER | WEATHER | WEATHER | WEATHER | WEATHER | WEATHER | WEATHER | |
| TEMP DEG C | 3.3 | TEMP DEG C | 2.2 | TEMP DEG C | 1.1 | TEMP DEG C | 1.1 |
| DEW POINT DEG C | -10.5 | DEW POINT DEG C | -10.0 | DEW POINT DEG C | -10.6 | DEW POINT DEG C | -10.6 |
| VISIBILITY (MI) | 50 | VISIBILITY (MI) | 30 | VISIBILITY (MI) | 30 | VISIBILITY (MI) | 30 |
| LOW 8 MID HI | TOTAL | LOW 8 MID HI | TOTAL | LOW 8 MID HI | TOTAL | LOW 8 MID HI | TOTAL |
| CLD (TENTHS) | LOW 8 MID HI | CLD (TENTHS) | LOW 8 MID HI | CLD (TENTHS) | LOW 8 MID HI | CLD (TENTHS) | LOW 8 MID HI |
| CLD HT (M) | LOW 1525 MID HI | CLD HT (M) | LOW 1220 MID 3050 HI | CLD HT (M) | LOW 1220 MID 3050 HI | CLD HT (M) | LOW 1220 MID 3050 HI |
| EXPONENTS | A = -.03 B = .04 P = .11 | EXPONENTS | A = -.07 B = -.10 P = .16 | EXPONENTS | A = -.43 B = -.36 P = .34 | EXPONENTS | A = -.43 B = -.36 P = .34 |
| NET RADIATION | 3.63 MW/CM2 | NET RADIATION | -0.70 MW/CM2 | NET RADIATION | -7.26 MW/CM2 | NET RADIATION | -7.26 MW/CM2 |
| RICHARDSON NO. | (4M) -.09 (8M) -.25 (16M) -.54 | RICHARDSON NO. | (4M) -.01 (8M) -.03 (16M) -.07 | RICHARDSON NO. | (4M) .12 (8M) .25 (16M) .36 | RICHARDSON NO. | (4M) .12 (8M) .25 (16M) .36 |
| (1/L)*10 | (39.192M)-1.34 (OBSERVED DATA): | (1/L)*10 | (39.192M) -.48 (OBSERVED DATA): | (1/L)*10 | (39.192M) -.71 (OBSERVED DATA): | (1/L)*10 | (39.192M) -.71 (OBSERVED DATA): |
| USTAR | (4M) -.26 (8M) -.35 (16M) -.36 | USTAR | (4M) -.03 (8M) -.04 (16M) -.05 | USTAR | (4M) .83 (8M) 1.44 (16M) 1.46 | USTAR | (4M) .83 (8M) 1.44 (16M) 1.46 |
| | (4M).2773 (8M).2730 (16M).2712 | | (4M).3244 (8M).3179 (16M).3197 | | (4M).0991 (8M).0895 (16M).0901 | | (4M).0991 (8M).0895 (16M).0901 |
| HEIGHT (M) | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | HEIGHT (M) | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | HEIGHT (M) | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | HEIGHT (M) | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : |
| 1. | 2.28 | 1.98 | 1.98 | 1.98 | 1.98 | 1.98 | 1.98 |
| 2. | 3.07 | 2.22 | 12.1 | 2.22 | 12.1 | 2.22 | 12.1 |
| 4. | 3.52 | 2.06 | 11.1 | 2.06 | 11.1 | 2.06 | 11.1 |
| 8. | 3.87 | 1.88 | 11.2 | 1.88 | 11.2 | 1.88 | 11.2 |
| 16. | 4.07 | 1.81 | 11.0 | 1.81 | 11.0 | 1.81 | 11.0 |
| 32. | 4.29 | 1.59 | 10.9 | 1.59 | 10.9 | 1.59 | 10.9 |
| 48. | 4.45 | 1.37 | 10.8 | 1.37 | 10.8 | 1.37 | 10.8 |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------|----------|------------|------------|----------|----------|------------|------------|----------|----------|------------|------------|
| 1.0 | 2.96 | 2.20 | 11.9 | 4.5 | 3.42 | 1.97 | 10.8 | 6.3 | 1.13 | .27 | 10.1 | 5.0 |
| 2.0 | 3.20 | 2.17 | 11.7 | 4.6 | 3.81 | 1.95 | 10.3 | 5.8 | 1.44 | .34 | 7.5 | 3.9 |
| 4.0 | 3.45 | 2.11 | 11.5 | 4.7 | 4.25 | 1.92 | 9.8 | 5.4 | 1.82 | .47 | 5.5 | 3.1 |
| 8.0 | 3.72 | 2.00 | 11.2 | 4.8 | 4.73 | 1.85 | 9.4 | 5.1 | 2.32 | .71 | 4.1 | 2.4 |
| 16.0 | 4.02 | 1.80 | 11.0 | 5.0 | 5.27 | 1.73 | 8.9 | 4.7 | 2.94 | 1.07 | 3.0 | 1.9 |
| 32.0 | 4.34 | 1.52 | 10.8 | 5.1 | 5.87 | 1.50 | 8.5 | 4.4 | 3.73 | 1.32 | 2.2 | 1.5 |
| 48.0 | 4.54 | 1.40 | 10.7 | 5.2 | 6.26 | 1.30 | 8.3 | 4.2 | 4.29 | .96 | 1.9 | 1.3 |
| | DU/DZ | DT/DZ | BU*100 | RI | DU/DZ | DT/DZ | BU*100 | RI | DU/DZ | DT/DZ | BU*100 | RI |
| 4.0 | .0880 | -.0190 | -.091 | -.04 | .1532 | -.0062 | -.020 | -.01 | .1466 | .0715 | 1.231 | .00 |
| 8.0 | .0475 | -.0160 | -.263 | -.13 | .0854 | -.0057 | -.058 | -.03 | .0930 | .0595 | 2.530 | .00 |
| 16.0 | .0256 | -.0099 | -.559 | -.54 | .0475 | -.0047 | -.153 | -.07 | .0591 | .0354 | 3.747 | .00 |
| 39.2* | .0100 | -.0037 | -1.080 | -2.24 | .0194 | -.0050 | -.762 | -1.38 | .0056 | -.0006 | -.229 | -.07 |

* OBSERVED DATA

| | DATE 24/02/77 | TIME 19:00:00 | DATE 24/02/77 | TIME 20:00:00 | DATE 24/02/77 | TIME 21:00:00 |
|---------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|---------------|---------------|
| CLD (TENTHS) | LOW 3 MID 3 HI TOTAL | 6:LOW 1 MID 2 HI TOTAL | 3:LOW 10 HI TOTAL | 10: | | |
| CLD MT (M) | LOW 1220 MID 3050 HI | LOW 1220 MID 3050 HI | LOW 1220 MID 3050 HI | LOW 1220 MID 3050 HI | | |
| EXPONENTS | A = .04 B = .26 P = .34 | A = -.18 B = -.23 P = .22 | A = -.22 B = -.16 P = .33 | A = -.22 B = -.16 P = .33 | | |
| NET RADIATION | -3.98 MW/CN2 | -3.28 MW/CN2 | -3.98 MW/CN2 | -3.98 MW/CN2 | | |
| RICHARDSN NO. | (4M) .18 (8M) .39(16M) .63 | (4M) .01 (8M) .01(16M) .02 | (4M) .03 (8M) .07(16M) .12 | (4M) .03 (8M) .07(16M) .12 | | |
| (1/1)*10 | (39.192M) .50 (OBSERVED DATA) | (39.192M) -.02 (OBSERVED DATA) | (39.192M) .01 (OBSERVED DATA) | (39.192M) .01 (OBSERVED DATA) | | |
| USTAR | (4M) 1.70 (8M) 3.28 (16M) 4.08 | (4M) .02 (8M) .02 (16M) .02 | (4M) .11 (8M) .17 (16M) .20 | (4M) .11 (8M) .17 (16M) .20 | | |
| | (4M) .0826 (8M) .0686 (16M) .0629 | (4M) .3104 (8M) .3159 (16M) .3191 | (4M) .1109 (8M) .1109 (16M) .1137 | (4M) .1109 (8M) .1109 (16M) .1137 | | |

| HEIGHT (M) | WD :(DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|--------------|-------------|-------------|---------------|---------------|-------------|-------------|-------------|---------------|---------------|-------------|-------------|-------------|---------------|---------------|
| 1. | : | | -1.27 | : | | : | | -7.9 | | | : | | -2.55 | | |
| 2. | : 298. | 1.30 | -1.08 | 24.3 | | : 319. | 3.54 | -7.3 | 7.2 | | : 301. | 1.22 | -2.48 | 8.1 | : |
| 4. | : 290. | 1.66 | -0.85 | 24.3 | | : 310. | 4.43 | -7.4 | 5.8 | | : 292. | 1.77 | -2.49 | 7.2 | : |
| 8. | : 301. | 2.36 | -0.53 | 26.9 | | 4.2: 317. | 5.01 | -7.9 | 5.6 | | 4.7: 297. | 1.94 | -2.50 | 6.6 | 3.6: |
| 16. | : 297. | 3.19 | .05 | 29.3 | | 3.9: 305. | 5.54 | -7.9 | 5.0 | | 4.1: 287. | 2.59 | -2.49 | 5.6 | 2.8: |
| 32. | : 308. | 3.39 | .36 | 29.0 | | 5.2: 304. | 6.60 | -9.3 | 4.1 | | 3.3: 291. | 3.08 | -2.55 | 4.4 | 2.7: |
| 48. | : 332. | 3.73 | .30 | 25.1 | | 6.7: 315. | 7.51 | -1.12 | 4.0 | | 3.2: 304. | 3.72 | -2.70 | 4.2 | 2.7: |

| HEIGHT (M) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : |
|--------------|------------|------------|--------------|--------------|------------|------------|--------------|--------------|------------|------------|--------------|--------------|
| 1.0 : | 1.08 : | -1.18 : | 24.1 : | 2.2 : | 3.12 : | -76 : | 7.9 : | 7.7 : | 1.02 : | -2.51 : | 9.8 : | 4.7 : |
| 2.0 : | 1.37 : | -1.08 : | 24.8 : | 2.7 : | 3.64 : | -76 : | 7.0 : | 6.5 : | 1.28 : | -2.51 : | 8.4 : | 4.2 : |
| 4.0 : | 1.73 : | -90 : | 25.4 : | 3.2 : | 4.24 : | -76 : | 6.2 : | 5.6 : | 1.61 : | -2.50 : | 7.2 : | 3.8 : |
| 8.0 : | 2.19 : | -56 : | 26.1 : | 3.8 : | 4.94 : | -77 : | 5.5 : | 4.7 : | 2.02 : | -2.49 : | 6.2 : | 3.4 : |
| 16.0 : | 2.78 : | -04 : | 26.8 : | 4.6 : | 5.76 : | -80 : | 4.8 : | 4.0 : | 2.54 : | -2.49 : | 5.4 : | 3.0 : |
| 32.0 : | 3.52 : | -48 : | 27.5 : | 5.5 : | 6.71 : | -92 : | 4.2 : | 3.4 : | 3.20 : | -2.55 : | 4.6 : | 2.7 : |
| 48.0 : | 4.04 : | -26 : | 28.0 : | 6.1 : | 7.34 : | -1.12 : | 3.9 : | 3.1 : | 3.65 : | -2.70 : | 4.2 : | 2.6 : |
| ----- | | | | | | | | | | | | |
| DU/DZ : | DTH/DZ : | BU*100 : | RI : | DU/DZ : | DTH/DZ : | BU*100 : | RI : | DU/DZ : | DTH/DZ : | BU*100 : | RI : | DU/DZ : |

| | 4.0 | : | .1377 | .0960 | 1.842 | .00 | : | .2170 | .0081 | .026 | .00 | : | .1236 | .0130 | .290 | .00 | : |
|--|-------|---|-------|-------|-------|-----|---|-------|--------|-------|------|---|-------|-------|-------|-----|---|
| | 8.0 | : | .0872 | .0818 | 3.908 | .00 | : | .1265 | .0066 | .062 | .00 | : | .0776 | .0112 | .634 | .00 | : |
| | 16.0 | : | .0552 | .0533 | 6.345 | .00 | : | .0737 | .0036 | .099 | .00 | : | .0488 | .0077 | 1.096 | .00 | : |
| | 39.2* | : | .0213 | .0062 | 2.740 | .00 | : | .0569 | -.0019 | -.211 | -.14 | : | .0400 | .0006 | .307 | .00 | : |

A-32

| | DATE 24/02/77 | TIME 22:00:00 | DATE 24/02/77 | TIME 23:00:00 | DATE 25/02/77 | TIME 00:00:00 |
|--------------------|---------------|---------------|-----------------|---------------|---------------|----------------------|
| WEATHER | | | | | | |
| TEMP DEG C | -0.6 | | | -1.7 | | TEMP DEG C -1.1 |
| DEN POINT DEG C | -9.4 | | | -8.9 | | DEN POINT DEG C -8.3 |
| VISIBILITY (MI) 20 | | | | 20 | | VISIBILITY (MI) 20 |
| CLD (TENTHS) | LOW | 10:10 HI | TOTAL | 10:10 HI | TOTAL | 10:10 HI |
| CLD HT (M) | LOW | 3050 HI | | 3050 HI | | 3050 HI |
| EXPONENTS | A = -1.0 | B = -.22 | P = .36 | A = -.27 | B = -.34 | P = .31 |
| NET RADIATION | | | | | | |
| RICHARDSON NO. | (4M) | .04 | (8M) | .17 | (4M) | .18 |
| | (39.192M) | .10 | (OBSERVED DATA) | (39.192M) | .17 | (OBSERVED DATA) |
| (1/L)*10 | (4M) | .17 | (8M) | .38 | (4M) | .18 |
| USTAR | (4M) | .1392 | (8M) | .1405 | (4M) | .1546 |
| | | | | | | |
| WEATHER | | | | | | |
| TEMP DEG C | | | | | | |
| DEN POINT DEG C | | | | | | |
| VISIBILITY (MI) 20 | | | | | | |
| CLD (TENTHS) | LOW | 10:10 HI | TOTAL | 10:10 HI | TOTAL | 10:10 HI |
| CLD HT (M) | LOW | 3050 HI | | 3050 HI | | 3050 HI |
| EXPONENTS | A = -1.0 | B = -.22 | P = .36 | A = -.27 | B = -.34 | P = .31 |
| NET RADIATION | | | | | | |
| RICHARDSON NO. | (4M) | .04 | (8M) | .17 | (4M) | .18 |
| | (39.192M) | .10 | (OBSERVED DATA) | (39.192M) | .17 | (OBSERVED DATA) |
| (1/L)*10 | (4M) | .17 | (8M) | .38 | (4M) | .18 |
| USTAR | (4M) | .1392 | (8M) | .1405 | (4M) | .1546 |
| | | | | | | |
| WEATHER | | | | | | |
| TEMP DEG C | | | | | | |
| DEN POINT DEG C | | | | | | |
| VISIBILITY (MI) 20 | | | | | | |
| CLD (TENTHS) | LOW | 10:10 HI | TOTAL | 10:10 HI | TOTAL | 10:10 HI |
| CLD HT (M) | LOW | 3050 HI | | 3050 HI | | 3050 HI |
| EXPONENTS | A = -1.0 | B = -.22 | P = .36 | A = -.27 | B = -.34 | P = .31 |
| NET RADIATION | | | | | | |
| RICHARDSON NO. | (4M) | .04 | (8M) | .17 | (4M) | .18 |
| | (39.192M) | .10 | (OBSERVED DATA) | (39.192M) | .17 | (OBSERVED DATA) |
| (1/L)*10 | (4M) | .17 | (8M) | .38 | (4M) | .18 |
| USTAR | (4M) | .1392 | (8M) | .1405 | (4M) | .1546 |
| | | | | | | |
| WEATHER | | | | | | |
| TEMP DEG C | | | | | | |
| DEN POINT DEG C | | | | | | |
| VISIBILITY (MI) 20 | | | | | | |
| CLD (TENTHS) | LOW | 10:10 HI | TOTAL | 10:10 HI | TOTAL | 10:10 HI |
| CLD HT (M) | LOW | 3050 HI | | 3050 HI | | 3050 HI |
| EXPONENTS | A = -1.0 | B = -.22 | P = .36 | A = -.27 | B = -.34 | P = .31 |
| NET RADIATION | | | | | | |
| RICHARDSON NO. | (4M) | .04 | (8M) | .17 | (4M) | .18 |
| | (39.192M) | .10 | (OBSERVED DATA) | (39.192M) | .17 | (OBSERVED DATA) |
| (1/L)*10 | (4M) | .17 | (8M) | .38 | (4M) | .18 |
| USTAR | (4M) | .1392 | (8M) | .1405 | (4M) | .1546 |
| | | | | | | |
| WEATHER | | | | | | |
| TEMP DEG C | | | | | | |
| DEN POINT DEG C | | | | | | |
| VISIBILITY (MI) 20 | | | | | | |
| CLD (TENTHS) | LOW | 10:10 HI | TOTAL | 10:10 HI | TOTAL | 10:10 HI |
| CLD HT (M) | LOW | 3050 HI | | 3050 HI | | 3050 HI |
| EXPONENTS | A = -1.0 | B = -.22 | P = .36 | A = -.27 | B = -.34 | P = .31 |
| NET RADIATION | | | | | | |
| RICHARDSON NO. | (4M) | .04 | (8M) | .17 | (4M) | .18 |
| | (39.192M) | .10 | (OBSERVED DATA) | (39.192M) | .17 | (OBSERVED DATA) |
| (1/L)*10 | (4M) | .17 | (8M) | .38 | (4M) | .18 |
| USTAR | (4M) | .1392 | (8M) | .1405 | (4M) | .1546 |
| | | | | | | |
| WEATHER | | | | | | |
| TEMP DEG C | | | | | | |

| HEIGHT (M) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : |
|--------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|-----------------|
| 1.0 : | 1.26 | -2.03 | 12.3 | 6.1 : | 1.50 | -1.89 | 13.5 | 6.7 : | 3.70 | -1.46 | 9.0 | 8.1 : |
| 2.0 : | 1.62 | -2.00 | 11.5 | 5.3 : | 1.86 | -1.86 | 11.2 | 5.3 : | 4.26 | -1.44 | 7.7 | 6.9 : |
| 4.0 : | 2.08 | -1.95 | 10.8 | 4.5 : | 2.31 | -1.81 | 9.3 | 4.2 : | 4.90 | -1.42 | 6.6 | 5.7 : |
| 8.0 : | 2.68 | -1.85 | 10.1 | 3.9 : | 2.87 | -1.72 | 7.7 | 3.4 : | 5.63 | -1.38 | 5.6 | 4.8 : |
| 16.0 : | 3.44 | -1.68 | 9.4 | 3.4 : | 3.55 | -1.58 | 6.4 | 2.7 : | 6.48 | -1.33 | 4.8 | 4.1 : |
| 32.0 : | 4.42 | -1.49 | 8.8 | 2.9 : | 4.42 | -1.46 | 5.3 | 2.1 : | 7.45 | -1.35 | 4.1 | 3.5 : |
| 48.0 : | 5.12 | -1.48 | 8.5 | 2.6 : | 5.01 | -1.57 | 4.8 | 1.8 : | 8.09 | -1.52 | 3.8 | 3.1 : |
| <hr/> | | | | | | | | | | | | |
| : | DU/DZ | DTH/DZ | BU*100 | RI : | DU/DZ | DTH/DZ | BU*100 | RI : | DU/DZ | DTH/DZ | BU*100 | RI : |
| 4.0 : | .1761 | .0360 | .480 | .00 : | .1677 | .0337 | .364 | .00 : | .2293 | .0207 | .050 | .00 : |
| 8.0 : | .1132 | .0323 | 1.043 | .00 : | .1040 | .0294 | .824 | .00 : | .1319 | .0176 | .128 | .00 : |
| 16.0 : | .0728 | .0250 | 1.952 | .00 : | .0646 | .0203 | 1.512 | .00 : | .0758 | .0114 | .250 | .00 : |
| 39.2* : | .0625 | .0106 | 2.566 | .00 : | .0394 | .0075 | 1.863 | .00 : | .0475 | .0019 | .172 | .00 : |

A-33

OBSERVED DATA

```

: DATE 25/02/77 TIME 01:00:00 : DATE 25/02/77 TIME 02:00:00 : DATE 25/02/77 TIME 03:00:00 :
: WEATHER : WEATHER : WEATHER :
: TEMP DEG C -1.7 : TEMP DEG C -2.2 : TEMP DEG C -2.8 :
: DEW POINT DEG C -10.6 : DEW POINT DEG C -9.4 : DEW POINT DEG C -8.9 :
: VISIBILITY (MI) 20 : VISIBILITY (MI) 20 : VISIBILITY (MI) 20 :
: CLD (TENTHS) :LOW 3 MID 7 HI TOTAL 10:LOW 2 MID 7 HI TOTAL 10:LOW 2 MID 4 HI TOTAL 6:
: CLD HT (M) :LOW 1525 MID 3050 HI :LOW 1525 MID 3050 HI :LOW 1525 MID 3050 HI
: EXPONENTS : A = -.26 B = -.32 P = .22 : A = -.25 B = -.33 P = .22 : A = -.18 B = -.53 P = .26
: NET RADIATION : -4.33 MW/CM2 : -7.26 MW/CM2 : -7.61 MW/CM2
: RICHARDSON NO.: (4M) .02 (8M) .04(16M) .09 : (4M) .03 (8M) .07(16M) .14 : (4M) .05 (8M) .11(16M) .22 :
: (1/L)*10 : (39.192M) .07 (OBSERVED DATA): (39.192M) .08 (OBSERVED DATA): (39.192M) 4.42 (OBSERVED DATA):
: USTAR : (4M) .05 (8M) .09 (16M) .13 : (4M) .11 (8M) .20 (16M) .28 : (4M) .19 (8M) .37 (16M) .60 :
: (4M) .3287 (8M) .3185 (16M) .2984 : (4M) .3024 (8M) .2817 (16M) .2587 : (4M) .2608 (8M) .2414 (16M) .2167 :

```

```

: HEIGHT (M) : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE :
: : (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) :
1. : -1.90 : -3.09 : -4.39 :
2. : 349. 4.01 -1.79 6.7 : 347. 3.82 -2.94 6.8 : 357. 3.33 -4.24 7.7 :
4. : 340. 4.65 -1.71 5.8 : 359. 4.37 -2.79 5.9 : 347. 3.95 -4.03 7.4 :
8. : 347. 5.33 -1.64 4.8 : 5.06 -2.66 5.2 : 4.7: 355. 4.80 -3.79 6.3 :
16. : 334. 6.17 -1.61 3.6 : 4.0: 352. 5.92 -2.53 4.6 : 3.7: 343. 6.00 -3.43 5.3 :
32. : 335. 7.34 -1.61 3.5 : 3.3: 353. 7.04 -2.48 3.4 : 3.0: 346. 7.14 -3.01 4.9 :
48. : 348. 8.09 -1.70 2.8 : 2.5: 5. 7.78 -2.56 3.1 : 2.6: 1. 7.31 -2.95 4.6 :

```

LEAST SQUARES FITTED DATA

```

: HEIGHT (M) : WS TEMP SIGA SIGE : WS TEMP SIGA SIGE : WS TEMP SIGA SIGE :
: : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) :
1.0 : 3.41 -1.82 8.2 9.3 : 3.22 -2.97 8.4 9.3 : 2.79 -4.30 8.9 9.7 :
2.0 : 3.98 -1.80 6.8 7.5 : 3.76 -2.94 7.1 7.4 : 3.35 -4.23 7.9 6.7 :
4.0 : 4.63 -1.76 5.7 6.0 : 4.39 -2.86 6.0 5.9 : 4.01 -4.10 7.0 4.6 :
8.0 : 5.39 -1.70 4.7 4.8 : 5.13 -2.74 5.0 4.7 : 4.81 -3.84 6.2 3.2 :
16.0 : 6.28 -1.61 3.9 3.8 : 6.00 -2.54 4.2 3.8 : 5.77 -3.43 5.5 2.2 :
32.0 : 7.31 -1.57 3.3 3.1 : 7.01 -2.40 3.6 3.0 : 6.91 -2.96 4.9 1.5 :
48.0 : 7.99 -1.72 2.9 2.7 : 7.68 -2.59 3.2 2.6 : 7.69 -2.97 4.5 1.2 :
: DU/DZ DTH/DZ RU*100 RI : DU/DZ DTH/DZ RU*100 RI : DU/DZ DTH/DZ RU*100 RI :
4.0 : .2360 -.0265 .071 .00 : .2292 -.0432 .130 .00 : .2439 .0748 .271 .00 :
8.0 : .1374 .0228 .181 .00 : .1339 .0367 .323 .00 : .1462 .0654 .659 .00 :
16.0 : .0800 .0154 .361 .00 : .0783 .0239 .616 .00 : .0876 .0468 1.309 .00 :
39.2* : .0469 .0044 .412 .00 : .0463 .0050 .512 .00 : .0106 .0138 1.471 .00 :

```

* OBSERVED DATA

OBSERVED DATA

| | DATE 25/02/77 | TIME 04:00:00 | DATE 25/02/77 | TIME 05:00:00 | DATE 25/02/77 | TIME 06:00:00 | |
|----------------|---|---|---|-------------------------------|---------------------------|------------------------|----|
| | WEATHER | | WEATHER | | WEATHER | | |
| | TEMP DEG C | -3.9 | TEMP DEG C | -3.9 | TEMP DEG C | -3.3 | |
| | DEW POINT DEG C | -8.9 | DEW POINT DEG C | -10.0 | DEW POINT DEG C | -11.1 | |
| | VISIBILITY (MI) | 20 | VISIBILITY (MI) | 20 | VISIBILITY (MI) | 20 | |
| CLD (TENTHS) | LOW 2 MID 4 HI | TOTL | 6: LOW 1 MID 2 HI | TOTL | 3: LOW 1 MID 2 HI | TOTL | 3: |
| CLD HT (M) | LOW 1525 MID 3050 HI | | LOW 1525 MID 3050 HI | | LOW 1525 MID 3050 HI | | |
| EXPONENTS | A = -.14 B = -.59 P = .33 | | A = -.22 B = -.29 P = .35 | | A = -.14 B = -.57 P = .42 | | |
| NET RADIATION | -3.63 MW/CM2 | | -5.79 MW/CM2 | | -5.44 MW/CM2 | | |
| RICHARDSON NO. | (4M) .05 (8M) .13 (16M) .31 | (4M) .07 (8M) .16 (16M) .29 | (4M) .16 (16M) .34 (OBSERVED DATA) | (39.192M) .06 (OBSERVED DATA) | (4M) .30 (16M) .41 | | |
| (1/L)*10 | (4M) .25 (8M) .49 (16M) 1.08 | (4M) .38 (8M) .67 (16M) .99 | (4M) 1.39 (8M) 2.08 (16M) 1.83 | | | | |
| USTAR | (4M) .1528 (8M) .1420 (16M) .1217 | (4M) .1405 (8M) .1314 (16M) .1246 | (4M) .0931 (8M) .0894 (16M) .0969 | | | | |
| HEIGHT (M) | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | WD WS TEMP SIGA SIGE : | WD WS TEMP SIGA SIGE : | WD WS TEMP SIGA SIGE : | |
| 1. | 309. 1.76 -5.28 7.9 | 357. 1.79 -5.40 12.2 | 331. 1.32 -7.21 5.1 | | | | |
| 2. | 298. 2.54 -5.20 7.0 | 348. 2.27 -5.06 11.8 | 319. 1.90 -6.62 4.5 | | | | |
| 4. | 305. 2.86 -5.14 6.4 | 373. 2.93 -4.81 10.1 | 2.4: 327. 2.48 -5.90 3.6 | | | | |
| 8. | 294. 3.83 -4.97 4.7 | 343. 3.74 -4.48 9.4 | 1.5: 321. 4.00 -4.96 2.4 | | | | |
| 16. | 304. 4.74 -4.01 3.9 | 344. 4.63 -4.15 7.8 | 1.3: 320. 4.15 -4.74 4.1 | | | | |
| 32. | 322. 5.16 -3.91 6.6 | 357. 5.41 -3.95 5.8 | 1.5: 332. 5.18 -4.79 3.1 | | | | |
| 48. | | | | | | | |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------|----------|------------|------------|----------|----------|------------|------------|----------|----------|------------|------------|
| 1.0 | 1.48 | -5.33 | 8.3 | 11.6 | 1.41 | -5.30 | 15.4 | 3.9 | 1.04 | -7.09 | 5.2 | 6.1 |
| 2.0 | 1.86 | -5.29 | 7.5 | 7.7 | 1.80 | -5.24 | 13.3 | 3.2 | 1.39 | -6.93 | 4.7 | 4.1 |
| 4.0 | 2.35 | -5.21 | 6.8 | 5.1 | 2.28 | -5.12 | 11.4 | 2.6 | 1.87 | -6.62 | 4.3 | 2.8 |
| 8.0 | 2.95 | -5.05 | 6.2 | 3.4 | 2.90 | -4.89 | 9.8 | 2.1 | 2.51 | -6.07 | 3.9 | 1.9 |
| 16.0 | 3.71 | -4.76 | 5.6 | 2.3 | 3.69 | -4.52 | 8.5 | 1.7 | 3.37 | -5.20 | 3.5 | 1.2 |
| 32.0 | 4.67 | -4.25 | 5.1 | 1.5 | 4.70 | -4.06 | 7.3 | 1.4 | 4.52 | -4.42 | 3.2 | .8 |
| 48.0 | 5.35 | -3.83 | 4.8 | 1.2 | 5.40 | -3.99 | 6.7 | 1.3 | 5.37 | -4.90 | 3.0 | .7 |
| | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI |
| 4.0 | .1813 | .0490 | .521 | .00 | .1847 | .0676 | .758 | .00 | .1861 | .1529 | 2.572 | .00 |
| 8.0 | .1141 | .0472 | 1.266 | .00 | .1174 | .0900 | 1.663 | .00 | .1249 | .1282 | 4.778 | .00 |
| 16.0 | .0713 | .0435 | 2.949 | .00 | .0747 | .0448 | 3.059 | .00 | .0838 | .0787 | 6.495 | .00 |
| 39.2* | .0253 | .0163 | 3.740 | .00 | .0487 | .0225 | 5.073 | .00 | .0644 | .0069 | 1.312 | .00 |

* OBSERVED DATA

OBSERVED DATA

| | DATE 25/02/77 | TIME 07:00:00 | DATE 25/02/77 | TIME 08:00:00 | DATE 25/02/77 | TIME 09:00:00 | |
|----------------|--|---------------|--|---------------|--|---------------|--|
| | WEATHER | | WEATHER | | WEATHER | | |
| CLD (TENTHS) | TEMP DEG C | -3.3 | TEMP DEG C | -2.2 | TEMP DEG C | -1.7 | |
| CLD HT (M) | DEW POINT DEG C | -10.6 | DEW POINT DEG C | -9.4 | DEW POINT DEG C | -9.4 | |
| EXPOSURE | VISIBILITY (MI) | 50 | VISIBILITY (MI) | 85 | VISIBILITY (MI) | 85 | |
| NET RADIATION | LOW 0 MID 8 HI TOTAL | | 8:LOW 0 MID 7 HI 0 TOTAL | | 7:LOW 1 MID 1 HI 0 TOTAL | | |
| RICHARDSON NO. | LOW MID 3050 HI | | LOW MID 3050 HI | | LOW 1070 MID 3050 HI | | |
| (1/L)*10 | A = -.13 B = -.35 P = .25 | | A = .07 B = -.10 P = .28 | | A = -.10 B = .05 P = .12 | | |
| USTAR | -1.05 MW/CM2 | | -1.81 MW/CM2 | | 11.231 MW/CM2 | | |
| | (4M) .02 (8M) .05 (16M) .11 | | (4M) .03 (8M) .07 (16M) .17 | | (4M) -.03 (8M) -.10 (16M) -.21 | | |
| | (39.192M) .14 (OBSERVED DATA): | | (39.192M) .97 (OBSERVED DATA): | | (39.192M) -.30 (OBSERVED DATA): | | |
| | (4M) .06 (8M) .10 (16M) .17 | | (4M) .10 (8M) .18 (16M) .39 | | (4M) -.11 (8M) -.14 (16M) -.15 | | |
| | (4M).1576 (8M).1515 (16M).1438 | | (4M).1364 (8M).1323 (16M).1201 | | (4M).4779 (8M).4649 (16M).4592 | | |
| HEIGHT (M) | WD WS TEMP SIGA SIGE : (DEG) (M/S) (C) (DEG) (DEG) (M/S) (C) (DEG) (DEG) | | WD WS TEMP SIGA SIGE : (DEG) (M/S) (C) (DEG) (DEG) (M/S) (C) (DEG) (DEG) | | WD WS TEMP SIGA SIGE : (DEG) (M/S) (C) (DEG) (DEG) (M/S) (C) (DEG) (DEG) | | |
| 1. | 30. 1.95 -4.92 6.2 | | 316. 1.62 -4.26 21.0 | | 345. 5.43 -1.85 7.5 | | |
| 2. | 21. 2.22 -4.91 5.7 | | 305. 1.98 -4.25 21.0 | | 336. 6.30 -2.02 7.0 | | |
| 4. | 29. 2.63 -4.92 4.8 | | 4.5: 313. 2.41 -4.25 21.9 | | 3.5: 343. 6.88 -2.19 6.5 | | |
| 8. | 15. 3.15 -4.95 4.5 | | 3.3: 303. 2.98 -4.26 23.6 | | 3.0: 331. 7.32 -2.39 5.2 | | |
| 16. | 15. 3.81 -5.02 4.0 | | 2.7: 310. 3.63 -4.23 25.2 | | 2.6: 331. 7.79 -2.61 5.6 | | |
| 32. | 25. 4.36 -5.11 4.3 | | 2.4: 330. 3.92 -4.25 25.4 | | 3.1: 344. 8.16 -2.84 5.7 | | |
| 48. | | | | | | | |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE |
|------------|-------|--------|--------|-------|-------|-------|--------|--------|-------|-------|-------|--------|--------|-------|-------|
| | (M/S) | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (M/S) | (C) | (DEG) | (DEG) |
| 1.0 | 1.58 | -4.92 | 6.7 | 9.0 | | 1.34 | -4.28 | 19.5 | 4.1 | | 5.19 | -1.84 | 7.9 | 4.0 | |
| 2.0 | 1.89 | -4.92 | 6.1 | 7.1 | | 1.63 | -4.28 | 20.4 | 3.8 | | 5.65 | -1.88 | 7.4 | 4.1 | |
| 4.0 | 2.25 | -4.92 | 5.6 | 5.6 | | 1.98 | -4.27 | 21.4 | 3.6 | | 6.14 | -1.96 | 6.9 | 4.3 | |
| 8.0 | 2.69 | -4.93 | 5.1 | 4.4 | | 2.41 | -4.26 | 22.5 | 3.4 | | 6.67 | -2.11 | 6.4 | 4.4 | |
| 16.0 | 3.21 | -4.95 | 4.6 | 3.4 | | 2.94 | -4.24 | 23.6 | 3.1 | | 7.25 | -2.36 | 6.0 | 4.6 | |
| 32.0 | 3.82 | -5.01 | 4.2 | 2.7 | | 3.57 | -4.23 | 24.7 | 2.9 | | 7.88 | -2.70 | 5.5 | 4.7 | |
| 48.0 | 4.24 | -5.11 | 4.0 | 2.4 | | 4.01 | -4.25 | 25.4 | 2.8 | | 8.28 | -2.81 | 5.3 | 4.8 | |
| | DU/DZ | OTH/DZ | BU*100 | RI | | DU/DZ | OTH/DZ | BU*100 | RI | | DU/DZ | OTH/DZ | BU*100 | RI | |
| 4.0 | .1331 | .0087 | .100 | .00 | | .1306 | .0130 | .192 | .00 | | .1709 | -.0280 | -.043 | -.03 | |
| 8.0 | .0794 | .0080 | .258 | .00 | | .0795 | .0124 | .496 | .00 | | .0929 | -.0235 | -.122 | -.05 | |
| 16.0 | .0473 | .0065 | .596 | .00 | | .0484 | .0112 | 1.212 | .00 | | .0505 | -.0146 | -.257 | -.21 | |
| 39.2* | .0344 | .0044 | 1.492 | .00 | | .0181 | .0087 | 3.463 | .00 | | .0231 | -.0044 | -.385 | -.30 | |

* OBSERVED DATA

OBSERVED DATA

| | DATE 25/02/77 | TIME 10:00:00 | DATE 25/02/77 | TIME 11:00:00 | DATE 25/02/77 | TIME 12:00:00 | |
|----------------|--|---------------|-----------------|--|-----------------|---------------|--|
| | WEATHER | | WEATHER | | WEATHER | | |
| | TEMP DEG C | 0.6 | TEMP DEG C | 0.6 | TEMP DEG C | 2.26 | |
| | DEW POINT DEG C | -10.0 | DEW POINT DEG C | -10.0 | DEW POINT DEG C | -10.0 | |
| | VISIBILITY (MI) | 85 | VISIBILITY (MI) | 85 | VISIBILITY (MI) | 85 | |
| CLD (TENTHS) | LOW 1 MID 1 HI | 0 | TOTL 2 | LOW 3 MID 0 HI | 0 | TOTL 3 | LOW 5 MID 0 HI |
| CLD HT (M) | LOW 915 MID 3050 HI | | | LOW 1220 MID | HI | | LOW 1220 MID |
| EXPONENTS | A = -.07 B = .03 P = .11 | | | A = -.02 B = -.02 P = .12 | | | A = -.12 B = .07 P = .12 |
| NET RADIATION | 23.58 MW/CM2 | | | 32.66 MW/CM2 | | | 36.63 MW/CM2 |
| RICHARDSON NO. | (4M) -.05 (8M) -.14 (16M) -.30 | | | (4M) -.09 (8M) -.25 (16M) -.52 | | | (4M) -.09 (8M) -.27 (16M) -.54 |
| | (39.192M) -.98 (OBSERVED DATA): | | | (39.192M) -.18 (OBSERVED DATA): | | | (39.192M) -.38 (OBSERVED DATA): |
| (1/L)*10 | (4M) -.15 (8M) -.20 (16M) -.20 | | | (4M) -.26 (8M) -.35 (16M) -.35 | | | (4M) -.28 (8M) -.37 (16M) -.37 |
| USTAR | (4M).5806 (8M).5662 (16M).5593 | | | (4M).4816 (8M).4774 (16M).4773 | | | (4M).5173 (8M).5120 (16M).5099 |
| HEIGHT (M) | WD WS TEMP SIGA SIGE (DEG) (DEG) (M/S) (C) (DEG) (DEG) (M/S) (C) (DEG) (DEG) | | | WD WS TEMP SIGA SIGE (DEG) (DEG) (M/S) (C) (DEG) (DEG) (M/S) (C) (DEG) (DEG) | | | WD WS TEMP SIGA SIGE (DEG) (DEG) (M/S) (C) (DEG) (DEG) (M/S) (C) (DEG) (DEG) |
| 1. | 347. 6.54 -.00 | | | 335. 5.24 1.40 | | | 346. 5.67 2.07 |
| 2. | 337. 7.50 -.46 | | | 324. 6.23 1.18 | | | 336. 6.60 1.74 |
| 4. | 344. 8.21 -.78 | | | 4.9: 7.1 | | | 5.8: 9.4 |
| 8. | 331. 9.00 -1.07 | | | 4.5: 5.5 | | | 5.4: 8.5 |
| 16. | 330. 9.27 -1.35 | | | 4.7: 6.5 | | | 5.5: 8.6 |
| 32. | 342. 9.50 -1.60 | | | 5.3: 7.3 | | | 5.7: 9.1 |
| 48. | | | | | | | |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------|----------|------------|------------|----------|----------|------------|------------|----------|----------|------------|------------|
| 1.0 | 6.29 | -16 | 8.2 | 4.4 | 5.06 | 1.23 | 9.6 | 5.9 | 5.44 | 1.79 | 15.1 | 4.4 |
| 2.0 | 6.81 | -23 | 7.8 | 4.5 | 5.50 | 1.14 | 9.4 | 5.8 | 5.91 | 1.69 | 13.8 | 4.6 |
| 4.0 | 7.38 | -37 | 7.5 | 4.6 | 5.99 | .97 | 9.3 | 5.8 | 6.41 | 1.50 | 12.7 | 4.9 |
| 8.0 | 7.99 | -61 | 7.2 | 4.7 | 6.52 | .65 | 9.1 | 5.7 | 6.96 | 1.14 | 11.7 | 5.1 |
| 16.0 | 8.65 | -102 | 6.8 | 4.8 | 7.09 | .14 | 9.0 | 5.6 | 7.55 | .57 | 10.7 | 5.4 |
| 32.0 | 9.37 | -151 | 6.5 | 4.9 | 7.72 | -.46 | 8.8 | 5.6 | 8.20 | -.06 | 9.9 | 5.7 |
| 48.0 | 9.81 | -154 | 6.4 | 5.0 | 8.11 | -.46 | 8.8 | 5.5 | 8.60 | .01 | 9.4 | 5.8 |
| | DU/DZ | DTM/DZ | BU*100 | RI | DU/DZ | DTM/DZ | BU*100 | RI | DU/DZ | DTM/DZ | PU*100 | RI |
| 4.0 | .1960 | -.0536 | -.057 | -.03 | .1690 | -.0708 | -.113 | -.04 | .1750 | -.0810 | -.113 | -.05 |
| 8.0 | .1061 | -.0448 | -.162 | -.07 | .0919 | -.0593 | -.320 | -.13 | .0950 | -.0674 | -.318 | -.13 |
| 16.0 | .0574 | -.0272 | -.335 | -.30 | .0500 | -.0363 | -.064 | -.52 | .0515 | -.0401 | -.645 | -.54 |
| 39.2* | .0144 | -.0056 | -.355 | -.23 | .0313 | -.0050 | -.461 | -.61 | .0231 | -.0056 | -.456 | -.75 |

* OBSERVED DATA

OBSERVED DATA

DATE 25/02/77 TIME 13:00:00 : DATE 25/02/77 TIME 14:00:00 : DATE 25/02/77 TIME 15:00:00 :
 WEATHER : WEATHER : WEATHER :
 TEMP DEG C 2.26 : TEMP DEG C 3.9 : TEMP DEG C :
 DEW POINT DEG C -8.3 : DEW POINT DEG C -9.4 : DEW POINT DEG C :
 VISIBILITY (MI) 85 : VISIBILITY (MI) 85 : VISIBILITY (MI) 85 :
 CLD (TENTHS) :LOW 5 MID 0 HI 0 TOTL 5 :LOW 5 MID 0 HI 0 TOTL 5 :LOW 5 MID 0 HI 0 TOTL 5 :
 CLD HT (M) :LOW 1070 MID HI :LOW 915 MID HI :LOW 915 MID HI :
 EXPONENTS : A = -.04 B = .15 P = .11 : A = -.06 B = .12 P = .11 : A = -.07 B = .14 P = .11 :
 NET RADIATION NO. : 37.72 MW/CM2 : 34.40 MW/CM2 : 27.21 MW/CM2 :
 RICHARDSON NO. : (4M) -.09 (8M) -.25 (16M) -.50 : (4M) -.10 (8M) -.28 (16M) -.56 : (4M) -.08 (8M) -.23 (16M) -.46 :
 (1/L)*10 : (39.192M)-3.05 (OBSERVED DATA): (39.192M)-2.03 (OBSERVED DATA): (39.192M)-3.71 (OBSERVED DATA):
 USTAR : (4M) -.25 (8M) -.34 (16M) -.34 : (4M) -.28 (8M) -.38 (16M) -.38 : (4M) -.23 (8M) -.31 (16M) -.32 :
 : (4M).5719 (8M).5625 (16M).5569 : (4M).5232 (8M).5154 (16M).5102 : (4M).5439 (8M).5341 (16M).5289 :

| HEIGHT (M) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|
| 1. | | | 2.84 | | | | | 3.27 | | | | | 3.97 | | |
| 2. | 358. | 6.34 | 2.47 | 9.8 | | 3. | 5.85 | 2.93 | 11.4 | | 5. | 6.09 | 3.69 | 11.8 | |
| 4. | 349. | 7.21 | 1.97 | 8.7 | | 354. | 6.51 | 2.46 | 10.3 | | 355. | 6.85 | 3.27 | 11.6 | |
| 8. | 357. | 8.01 | 1.52 | 8.0 | 5.0 | 1. | 7.20 | 2.04 | 10.0 | 5.5 | 3. | 7.62 | 2.85 | 11.2 | 5.4 |
| 16. | 344. | 8.45 | 1.26 | 7.9 | 5.0 | 348. | 7.66 | 1.84 | 9.0 | 5.9 | 350. | 8.06 | 2.65 | 10.2 | 5.5 |
| 32. | 344. | 8.94 | .92 | 8.3 | 5.7 | 348. | 8.14 | 1.49 | 9.3 | 6.1 | 350. | 8.57 | 2.30 | 10.1 | 5.9 |
| 48. | 357. | 9.09 | .64 | 8.5 | 6.6 | 0. | 8.29 | 1.25 | 9.3 | 6.9 | 2. | 8.70 | 2.03 | 9.5 | 7.1 |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------|----------|------------|------------|----------|----------|------------|------------|----------|----------|------------|------------|
| 1.0 | 6.11 | 2.49 | 9.4 | 3.5 | 5.57 | 2.95 | 11.5 | 4.3 | 5.83 | 3.70 | 12.6 | 3.9 |
| 2.0 | 6.59 | 2.39 | 9.1 | 3.9 | 6.01 | 2.86 | 11.0 | 4.6 | 6.29 | 3.61 | 12.0 | 4.3 |
| 4.0 | 7.12 | 2.20 | 8.9 | 4.3 | 6.48 | 2.68 | 10.5 | 5.0 | 6.80 | 3.45 | 11.5 | 4.7 |
| 8.0 | 7.69 | 1.85 | 8.6 | 4.8 | 6.99 | 2.36 | 10.1 | 5.4 | 7.34 | 3.15 | 10.9 | 5.2 |
| 16.0 | 8.30 | 1.28 | 8.4 | 5.3 | 7.54 | 1.83 | 9.6 | 5.9 | 7.93 | 2.65 | 10.4 | 5.7 |
| 32.0 | 8.96 | .66 | 8.1 | 5.9 | 8.13 | 1.27 | 9.2 | 6.4 | 8.56 | 2.09 | 9.9 | 6.3 |
| 48.0 | 9.37 | .74 | 8.0 | 6.3 | 8.50 | 1.34 | 9.0 | 6.7 | 8.96 | 2.11 | 9.7 | 6.7 |
| | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI |
| 4.0 | .1822 | -.0805 | -.090 | -.04 | .1639 | -.0731 | -.099 | -.05 | .1747 | -.0678 | -.083 | -.04 |
| 8.0 | .0984 | -.0669 | -.258 | -.12 | .0884 | -.0605 | -.282 | -.14 | .0943 | -.0565 | -.238 | -.11 |
| 16.0 | .0531 | -.0395 | -.525 | -.50 | .0477 | -.0355 | -.569 | -.56 | .0509 | -.0339 | -.490 | -.46 |
| 39.2* | .0094 | -.0075 | -.508 | -.49 | .0094 | -.0050 | -.407 | -.36 | .0081 | -.0069 | -.505 | -.43 |

* OBSERVED DATA

OBSERVED DATA

| | DATE 28/02/77 | TIME 09:00:00 | DATE 28/02/77 | TIME 10:00:00 | DATE 28/02/77 | TIME 11:00:00 | |
|----------------|--------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|--|
| | WEATHER | | WEATHER | | WEATHER | | |
| | TEMP DEG C | 0.6 | TEMP DEG C | 3.3 | TEMP DEG C | 7.2 | |
| | DEW POINT DEG C | -8.3 | DEW POINT DEG C | -7.8 | DEW POINT DEG C | -8.9 | |
| | VISIBILITY (MI) | 85 | VISIBILITY (MI) | 60 | VISIBILITY (MI) | 60 | |
| CLD (TENTHS) | LOW 0 MID 2 HI 8 TOTL | 10:LOW 8 HI 8 TOTL | 10:LOW 8 HI 8 TOTL | 10:LOW 8 HI 8 TOTL | 10:LOW 8 HI 8 TOTL | 10:LOW 8 HI 8 TOTL | |
| CLD HT (M) | MID 3660 HI 6095 | MID 3660 HI 6095 | MID 3660 HI 6095 | MID 3660 HI 6095 | MID 3660 HI 6095 | MID 3660 HI 6095 | |
| EXPONENTS | A = -.14 B = -.05 P = .18 | A = -.20 B = .02 P = .13 | A = -.20 B = .02 P = .13 | A = -.20 B = .02 P = .13 | A = -.20 B = .02 P = .13 | A = -.20 B = .02 P = .13 | |
| NET RADIATION | 10.12 MW/CM2 | 10.12 MW/CM2 | 10.12 MW/CM2 | 10.12 MW/CM2 | 10.12 MW/CM2 | 10.12 MW/CM2 | |
| RICHARDSON NO. | (4M) -.03 (8M) -.06 (16M) -.08 | (4M) -.03 (8M) -.06 (16M) -.08 | (4M) -.03 (8M) -.06 (16M) -.08 | (4M) -.03 (8M) -.06 (16M) -.08 | (4M) -.03 (8M) -.06 (16M) -.08 | (4M) -.03 (8M) -.06 (16M) -.08 | |
| | (39.192M) .16 (OBSERVED DATA): | (39.192M) -.67 (OBSERVED DATA): | (39.192M) -.67 (OBSERVED DATA): | (39.192M) -.67 (OBSERVED DATA): | (39.192M) -.67 (OBSERVED DATA): | (39.192M) -.67 (OBSERVED DATA): | |
| (1/L)*10 | (4M) -.08 (8M) -.10 (16M) -.06 | (4M) -.10 (8M) -.10 (16M) -.13 | (4M) -.10 (8M) -.10 (16M) -.13 | (4M) -.10 (8M) -.10 (16M) -.13 | (4M) -.10 (8M) -.10 (16M) -.13 | (4M) -.10 (8M) -.10 (16M) -.13 | |
| USTAR | (4M).3128 (8M).3137 (16M).3150 | (4M).5722 (8M).5607 (16M).5576 | (4M).5722 (8M).5607 (16M).5576 | (4M).5722 (8M).5607 (16M).5576 | (4M).5722 (8M).5607 (16M).5576 | (4M).5722 (8M).5607 (16M).5576 | |
| | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | |
| HEIGHT (M) | :(DEG) (M/S) (C) (DEG) (DEG) | :(DEG) (M/S) (C) (DEG) (DEG) | :(DEG) (M/S) (C) (DEG) (DEG) | :(DEG) (M/S) (C) (DEG) (DEG) | :(DEG) (M/S) (C) (DEG) (DEG) | :(DEG) (M/S) (C) (DEG) (DEG) | |
| 1. | 152. 3.56 1.63 1.71 | 152. 3.56 1.63 1.71 | 152. 3.56 1.63 1.71 | 152. 3.56 1.63 1.71 | 152. 3.56 1.63 1.71 | 152. 3.56 1.63 1.71 | |
| 2. | 141. 4.06 1.49 1.49 | 141. 4.06 1.49 1.49 | 141. 4.06 1.49 1.49 | 141. 4.06 1.49 1.49 | 141. 4.06 1.49 1.49 | 141. 4.06 1.49 1.49 | |
| 4. | 144. 4.61 1.33 7.5 | 144. 4.61 1.33 7.5 | 144. 4.61 1.33 7.5 | 144. 4.61 1.33 7.5 | 144. 4.61 1.33 7.5 | 144. 4.61 1.33 7.5 | |
| 16. | 138. 5.10 1.19 6.4 | 138. 5.10 1.19 6.4 | 138. 5.10 1.19 6.4 | 138. 5.10 1.19 6.4 | 138. 5.10 1.19 6.4 | 138. 5.10 1.19 6.4 | |
| 32. | 140. 5.82 1.10 6.4 | 140. 5.82 1.10 6.4 | 140. 5.82 1.10 6.4 | 140. 5.82 1.10 6.4 | 140. 5.82 1.10 6.4 | 140. 5.82 1.10 6.4 | |
| 48. | 149. 6.36 1.02 5.4 | 149. 6.36 1.02 5.4 | 149. 6.36 1.02 5.4 | 149. 6.36 1.02 5.4 | 149. 6.36 1.02 5.4 | 149. 6.36 1.02 5.4 | |

LEAST SQUARES FITTED DATA

| | DATE 28/02/77 | TIME 09:00:00 | DATE 28/02/77 | TIME 10:00:00 | DATE 28/02/77 | TIME 11:00:00 | |
|----------------|--------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|--|
| | WEATHER | | WEATHER | | WEATHER | | |
| | TEMP DEG C | 0.6 | TEMP DEG C | 3.3 | TEMP DEG C | 7.2 | |
| | DEW POINT DEG C | -8.3 | DEW POINT DEG C | -7.8 | DEW POINT DEG C | -8.9 | |
| | VISIBILITY (MI) | 85 | VISIBILITY (MI) | 60 | VISIBILITY (MI) | 60 | |
| CLD (TENTHS) | LOW 0 MID 2 HI 8 TOTL | 10:LOW 8 HI 8 TOTL | 10:LOW 8 HI 8 TOTL | 10:LOW 8 HI 8 TOTL | 10:LOW 8 HI 8 TOTL | 10:LOW 8 HI 8 TOTL | |
| CLD HT (M) | MID 3660 HI 6095 | MID 3660 HI 6095 | MID 3660 HI 6095 | MID 3660 HI 6095 | MID 3660 HI 6095 | MID 3660 HI 6095 | |
| EXPONENTS | A = -.14 B = -.05 P = .18 | A = -.20 B = .02 P = .13 | A = -.20 B = .02 P = .13 | A = -.20 B = .02 P = .13 | A = -.20 B = .02 P = .13 | A = -.20 B = .02 P = .13 | |
| NET RADIATION | 10.12 MW/CM2 | 10.12 MW/CM2 | 10.12 MW/CM2 | 10.12 MW/CM2 | 10.12 MW/CM2 | 10.12 MW/CM2 | |
| RICHARDSON NO. | (4M) -.03 (8M) -.06 (16M) -.08 | (4M) -.03 (8M) -.06 (16M) -.08 | (4M) -.03 (8M) -.06 (16M) -.08 | (4M) -.03 (8M) -.06 (16M) -.08 | (4M) -.03 (8M) -.06 (16M) -.08 | (4M) -.03 (8M) -.06 (16M) -.08 | |
| | (39.192M) .16 (OBSERVED DATA): | (39.192M) -.67 (OBSERVED DATA): | (39.192M) -.67 (OBSERVED DATA): | (39.192M) -.67 (OBSERVED DATA): | (39.192M) -.67 (OBSERVED DATA): | (39.192M) -.67 (OBSERVED DATA): | |
| (1/L)*10 | (4M) -.08 (8M) -.10 (16M) -.06 | (4M) -.10 (8M) -.10 (16M) -.13 | (4M) -.10 (8M) -.10 (16M) -.13 | (4M) -.10 (8M) -.10 (16M) -.13 | (4M) -.10 (8M) -.10 (16M) -.13 | (4M) -.10 (8M) -.10 (16M) -.13 | |
| USTAR | (4M).3128 (8M).3137 (16M).3150 | (4M).5722 (8M).5607 (16M).5576 | (4M).5722 (8M).5607 (16M).5576 | (4M).5722 (8M).5607 (16M).5576 | (4M).5722 (8M).5607 (16M).5576 | (4M).5722 (8M).5607 (16M).5576 | |
| | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | |
| HEIGHT (M) | :(DEG) (M/S) (C) (DEG) (DEG) | :(DEG) (M/S) (C) (DEG) (DEG) | :(DEG) (M/S) (C) (DEG) (DEG) | :(DEG) (M/S) (C) (DEG) (DEG) | :(DEG) (M/S) (C) (DEG) (DEG) | :(DEG) (M/S) (C) (DEG) (DEG) | |
| 1. | 152. 3.56 1.63 1.71 | 152. 3.56 1.63 1.71 | 152. 3.56 1.63 1.71 | 152. 3.56 1.63 1.71 | 152. 3.56 1.63 1.71 | 152. 3.56 1.63 1.71 | |
| 2. | 141. 4.06 1.49 1.49 | 141. 4.06 1.49 1.49 | 141. 4.06 1.49 1.49 | 141. 4.06 1.49 1.49 | 141. 4.06 1.49 1.49 | 141. 4.06 1.49 1.49 | |
| 4. | 144. 4.61 1.33 7.5 | 144. 4.61 1.33 7.5 | 144. 4.61 1.33 7.5 | 144. 4.61 1.33 7.5 | 144. 4.61 1.33 7.5 | 144. 4.61 1.33 7.5 | |
| 16. | 138. 5.10 1.19 6.4 | 138. 5.10 1.19 6.4 | 138. 5.10 1.19 6.4 | 138. 5.10 1.19 6.4 | 138. 5.10 1.19 6.4 | 138. 5.10 1.19 6.4 | |
| 32. | 140. 5.82 1.10 6.4 | 140. 5.82 1.10 6.4 | 140. 5.82 1.10 6.4 | 140. 5.82 1.10 6.4 | 140. 5.82 1.10 6.4 | 140. 5.82 1.10 6.4 | |
| 48. | 149. 6.36 1.02 5.4 | 149. 6.36 1.02 5.4 | 149. 6.36 1.02 5.4 | 149. 6.36 1.02 5.4 | 149. 6.36 1.02 5.4 | 149. 6.36 1.02 5.4 | |

* OBSERVED DATA

OBSERVED DATA

```

: DATE 28/02/77 TIME 12:00:00 : DATE 28/02/77 TIME 13:00:00 : DATE 28/02/77 TIME 14:00:00 :
: WEATHER : WEATHER : WEATHER :
: TEMP DEG C 7.8 : TEMP DEG C 9.5 : TEMP DEG C 10.0 :
: DEW POINT DEG C -8.9 : DEW POINT DEG C -8.9 : DEW POINT DEG C -10.0 :
: VISIBILITY (MI) 60 : VISIBILITY (MI) 60 : VISIBILITY (MI) 60 :
: CLD (TENTHS) :LOW 0 MID 2 HI 8 TOTL 10:LOW 0 MID 2 HI 8 TOTL 10:LOW 0 MID 3 HI 7 TOTL 10:
: CLD HT (M) :LOW 3660 MID 3660 HI 6095 :LOW 3660 MID 3660 HI 6095 :LOW 2440 MID 2440 HI 6095 :
: EXPONENTS : A = -.21 B = .01 P = .12 : A = -.19 B = -.05 P = .13 : A = -.17 B = .13 P = .12 :
: NET RADIATION : 29.03 MW/CM2 : 16.33 MW/CM2 : 14.86 MW/CM2 :
: RICHARDSON NO.: (4M) -.08 (8M) -.23(16M) -.49 : (4M) -.04 (8M) -.12(16M) -.25 : (4M) -.10 (8M) -.27(16M) -.55 :
: (1/L)*10 : (39.192M)-4.67 (OBSERVED DATA): (39.192M)-1.27 (OBSERVED DATA): (39.192M)-3.68 (OBSERVED DATA):
: USTAR : (4M) -.24 (8M) -.33 (16M) -.33 : (4M) -.13 (8M) -.17 (16M) -.17 : (4M) -.28 (8M) -.37 (16M) -.37 :
: (4M).5297 (8M).5223 (16M).5197 : (4M).5196 (8M).5101 (16M).5076 : (4M).3655 (8M).3620 (16M).3606 :

```

```

: WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE :
: (DEG) (M/S) (C) (DEG) (DEG) (DEG) (M/S) (C) (DEG) (DEG) (M/S) (C) (DEG) (DEG) (DEG) :
: 1. : 8.71 : 8.91 : 9.74 :
: 2. : 161. : 5.84 : 3.44 : 9.5 : 164. : 5.84 : 8.74 : 10.0 : 4.7 : 163. : 3.98 : 9.56 : 13.8 : 4.6 :
: 4. : 151. : 6.73 : 8.00 : 8.8 : 154. : 6.70 : 8.68 : 8.0 : 4.5 : 153. : 4.60 : 9.30 : 10.9 : 5.0 :
: 8. : 155. : 7.43 : 7.56 : 7.7 : 157. : 7.56 : 8.08 : 6.7 : 4.2 : 156. : 5.14 : 8.92 : 9.8 : 6.2 :
: 16. : 148. : 7.95 : 7.31 : 7.0 : 149. : 8.12 : 7.97 : 5.6 : 4.1 : 148. : 5.50 : 8.88 : 8.5 : 6.3 :
: 32. : 148. : 8.40 : 6.91 : 5.4 : 148. : 8.64 : 7.63 : 4.8 : 3.8 : 146. : 5.75 : 8.59 : 7.5 : 7.0 :
: 48. : 155. : 8.52 : 6.63 : 4.9 : 156. : 8.86 : 7.36 : 4.8 : 3.9 : 153. : 5.86 : 8.35 : 7.1 : 7.8 :

```

LEAST SQUARES FITTED DATA

```

: WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE :
: (M/S) (C) (DEG) (DEG) (DEG) (M/S) (C) (DEG) (DEG) (M/S) (C) (DEG) (DEG) (DEG) :
: 1.0 : 5.63 : 8.45 : 11.6 : 4.7 : 5.55 : 8.74 : 10.0 : 4.7 : 3.84 : 9.56 : 13.8 : 4.6 :
: 2.0 : 6.10 : 8.36 : 10.0 : 4.7 : 6.07 : 8.68 : 8.8 : 4.5 : 4.17 : 9.51 : 12.2 : 5.0 :
: 4.0 : 6.61 : 8.18 : 8.7 : 4.8 : 6.64 : 8.56 : 7.7 : 4.4 : 4.53 : 9.39 : 10.9 : 5.5 :
: 8.0 : 7.16 : 7.85 : 7.5 : 4.8 : 7.26 : 8.33 : 6.7 : 4.2 : 4.92 : 9.19 : 9.6 : 6.0 :
: 16.0 : 7.76 : 7.31 : 6.4 : 4.8 : 7.93 : 7.95 : 5.9 : 4.1 : 5.34 : 8.85 : 8.5 : 6.6 :
: 32.0 : 8.41 : 6.70 : 5.6 : 4.9 : 8.68 : 7.49 : 5.1 : 3.9 : 5.79 : 8.45 : 7.6 : 7.2 :
: 48.0 : 8.82 : 6.71 : 5.1 : 4.9 : 9.14 : 7.42 : 4.7 : 3.8 : 6.08 : 8.41 : 7.1 : 7.6 :
: DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI :
: 4.0 : .1775 : -.0741 : -.095 : -.04 : .1981 : -.0482 : -.061 : -.04 : .1240 : -.0424 : -.115 : -.05 :
: 8.0 : .0962 : -.0620 : -.270 : -.12 : .1083 : -.0405 : -.172 : -.06 : .0673 : -.0353 : -.324 : -.14 :
: 16.0 : .0521 : -.0378 : -.561 : -.49 : .0592 : -.0251 : -.356 : -.25 : .0365 : -.0210 : -.656 : -.55 :
: 39.2* : .0075 : -.0075 : -.564 : -.30 : .0137 : -.0069 : -.483 : -.63 : .0069 : -.0050 : -.794 : -.96 :

```

* OBSERVED DATA

OBSERVED DATA

```

: DATE 28/02/77  TIME 15:00:00  :
: WEATHER :
: TEMP DEG C  10.0 :
: DEW POINT DEG C  -10.0 :
: VISIBILITY (MI)  60 :
CLD (TENTHS) :LOW  0 MID  3 HI  7 TOTL 10:
CLD HT (M) : LOW  MID  2440 HI  6095 :
EXPONENTS : A= -.17 B= .01 P= .12 :
NET RADIATION : 7.60 MW/CM2 :
RICHARDSON NO. : (4M) -.04 (8M) -.12 (16M) -.24 :
: (39.192M) -.41 (OBSERVED DATA):
(1/L)*10 : (4M) -.13 (8M) -.17 (16M) -.17:
USTAR : (4M).4001 (8M).3901 (16M).3848:

```

```

: WD WS TEMP SIGA SIGE :
HEIGHT (M) : (DEG) (M/S) (C) (DEG) (DEG):
-----
1. : 9.84 :
2. : 154. 4.49 9.77 8.9 :
4. : 143. 5.21 9.53 7.7 :
8. : 147. 5.85 9.22 6.5 4.4:
16. : 139. 6.13 9.30 5.9 4.5:
32. : 139. 6.41 9.05 5.4 4.6:
48. : 146. 6.74 8.81 5.2 4.4:
-----

```

LEAST SQUARES FITTED DATA

```

: WS TEMP SIGA SIGE :
HEIGHT (M) : (M/S) (C) (DEG) (DEG) :
-----
1.0 : 4.33 9.71 9.7 4.3 :
2.0 : 4.71 9.68 8.6 4.3 :
4.0 : 5.11 9.61 7.7 4.4 :
8.0 : 5.55 9.47 6.8 4.4 :
16.0 : 6.03 9.25 6.1 4.5 :
32.0 : 6.55 8.95 5.4 4.5 :
48.0 : 6.87 8.85 5.0 4.5 :
-----
: DU/DZ DTH/DZ BU*100 PI :
-----
4.0 : .1407 -.0240 -.051 -.02 :
8.0 : .0764 -.0200 -.144 -.06 :
16.0 : .0415 -.0119 -.292 -.24 :
39.2* : .0206 -.0050 -.620 -.82 :
-----

```

* OBSERVED DATA

OBSERVED DATA

| | : DATE | 28/02/77 | TIME | 16:00:00 | : | DATE | 28/02/77 | TIME | 17:00:00 | : | DATE | 28/02/77 | TIME | 18:00:00 | : |
|----------------|--------|-----------------------------------|-------------|----------|---------|-----------------------------------|-----------------|--------|------------|-----------------------------------|-------------|-----------------|------------|----------|---|
| | : | WEATHER | : | : | : | : | WEATHER | : | : | : | : | WEATHER | : | : | : |
| | : | TEMP DEG C | 10.0 | : | : | : | TEMP DEG C | 10.7 | : | : | : | TEMP DEG C | 10.7 | : | : |
| | : | DEW POINT DEG C | -8.9 | : | : | : | DEW POINT DEG C | -8.1 | : | : | : | DEW POINT DEG C | -8.1 | : | : |
| | : | VISIBILITY (MI) | 85 | : | : | : | VISIBILITY (MI) | 85 | : | : | : | VISIBILITY (MI) | 85 | : | : |
| | : | LOW | 0 MID 10 HI | TOTL | 10: LOW | 0 MID 9 HI | 0 TOTL | 9: LOW | 0 MID 8 HI | 0 TOTL | : | 9: LOW | 0 MID 8 HI | 0 TOTL | : |
| CLOUD (TENTHS) | : | LOW | MID 4570 HI | : | : | LOW | MID 4570 HI | : | : | LOW | MID 3660 HI | : | : | : | : |
| CLOUD HT (M) | : | LOW | MID 4570 HI | : | : | LOW | MID 4570 HI | : | : | LOW | MID 3660 HI | : | : | : | : |
| EXPONENTS | : | A = -0.22 B = -0.12 P = .14 | : | : | : | A = -0.10 B = .01 P = .14 | : | : | : | A = -0.22 B = -0.20 P = .19 | : | : | : | : | : |
| NET RADIATION | : | 5.79 MW/CM2 | : | : | : | -0.69 MW/CM2 | : | : | : | -7.25 MW/CM2 | : | : | : | : | : |
| RICHARDSON NO. | : | (4M) -.02 (8M) -.05 (16M) -.10 | : | : | : | (4M) .00 (8M) -.01 (16M) .01 | : | : | : | (4M) .02 (8M) .06 (16M) .12 | : | : | : | : | : |
| | : | (39.192M) -.31 (OBSERVED DATA) | : | : | : | (39.192M) -1.07 (OBSERVED DATA) | : | : | : | (39.192M) .00 (OBSERVED DATA) | : | : | : | : | : |
| (L/L)*10 | : | (4M) -.06 (8M) -.07 (16M) -.07 | : | : | : | (4M) .01 (8M) .01 (16M) .01 | : | : | : | (4M) .08 (8M) .14 (16M) .20 | : | : | : | : | : |
| USTAR | : | (4M) .4342 (8M) .4341 (16M) .4323 | : | : | : | (4M) .4059 (8M) .3785 (16M) .3706 | : | : | : | (4M) .3592 (8M) .3256 (16M) .2960 | : | : | : | : | : |

| HEIGHT (M) | : (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE : (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE : (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE : (DEG) | WD (DEG) |
|------------|---------|----------|----------|------------|--------------|----------|----------|----------|------------|--------------|----------|----------|----------|------------|--------------|----------|
| 1. | : | | 10.44 | | : | | | 10.23 | | : | | | 9.79 | | : | |
| 2. | : | 156. | 5.04 | 8.6 | : | 145. | 4.66 | 10.29 | 9.0 | : | 155. | 4.41 | 9.89 | 7.4 | : | |
| 4. | : | 145. | 5.85 | 7.3 | | 134. | 5.46 | 10.25 | 8.2 | | 144. | 5.12 | 10.01 | 6.6 | | |
| 8. | : | 149. | 6.63 | 6.5 | | 4.6: | 6.17 | 10.04 | 7.6 | | 149. | 5.77 | 9.86 | 5.8 | 4.2: | |
| 16. | : | 142. | 7.21 | 6.0 | | 4.5: | 6.65 | 10.18 | 7.1 | | 141. | 6.57 | 10.21 | 4.9 | 3.8: | |
| 32. | : | 141. | 7.68 | 4.6 | | 3.8: | 7.20 | 10.00 | 6.6 | | 141. | 7.53 | 10.18 | 3.9 | 3.3: | |
| 48. | : | 148. | 8.08 | 4.2 | | 3.9: | 7.39 | 9.77 | 6.6 | | 148. | 8.23 | 10.02 | 3.8 | 2.9: | |

LEAST SQUARES FITTED DATA

| HEIGHT (M) : | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|--------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1.0 : | 4.73 | 10.37 | 10.1 | 6.0 | 4.41 | 10.23 | 9.5 | 3.9 | 3.88 | 9.83 | 8.9 | 6.4 |
| 2.0 : | 5.23 | 10.34 | 8.7 | 5.5 | 4.86 | 10.23 | 8.9 | 3.9 | 4.43 | 9.86 | 7.6 | 5.6 |
| 4.0 : | 5.78 | 10.28 | 7.5 | 5.1 | 5.37 | 10.22 | 8.3 | 3.9 | 5.06 | 9.91 | 6.5 | 4.9 |
| 8.0 : | 6.38 | 10.17 | 6.4 | 4.7 | 5.92 | 10.19 | 7.7 | 4.0 | 5.79 | 10.00 | 5.6 | 4.3 |
| 16.0 : | 7.05 | 9.97 | 5.5 | 4.3 | 6.53 | 10.13 | 7.2 | 4.0 | 6.61 | 10.13 | 4.8 | 3.7 |
| 32.0 : | 7.79 | 9.68 | 4.7 | 4.0 | 7.21 | 9.98 | 6.7 | 4.0 | 7.56 | 10.20 | 4.1 | 3.2 |
| 48.0 : | 8.26 | 9.54 | 4.3 | 3.8 | 7.63 | 9.78 | 6.4 | 4.0 | 8.18 | 10.02 | 3.7 | 3.0 |
| DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | |
| 4.0 : | .1921 | -.0185 | -.031 | -.02 | .1762 | .0037 | .007 | .00 | .2262 | .0335 | .072 | .00 |
| 8.0 : | .1061 | -.0157 | -.085 | -.05 | .0972 | .0028 | .018 | .00 | .1293 | .0284 | .188 | .00 |
| 16.0 : | .0585 | -.0101 | -.180 | -.10 | .0536 | .0011 | .023 | .00 | .0739 | .0184 | .372 | .00 |
| 39.2* | .0250 | -.0056 | -.485 | -.62 | .0119 | -.0044 | -.438 | -.54 | .0437 | .0000 | .000 | .00 |

* OBSERVED DATA

[illegible]

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1.0 | 1.99 | 5.58 | 11.8 | 11.1 | 2.84 | 4.85 | 8.4 | 5.5 | 2.90 | 5.07 | 11.8 | 19.9 |
| 2.0 | 2.61 | 5.75 | 8.4 | 7.1 | 3.48 | 4.95 | 7.5 | 4.7 | 3.67 | 5.17 | 8.3 | 11.9 |
| 4.0 | 3.42 | 6.09 | 6.0 | 4.5 | 4.25 | 5.15 | 6.6 | 4.0 | 4.65 | 5.38 | 5.9 | 7.2 |
| 8.0 | 4.48 | 6.71 | 4.2 | 2.9 | 5.21 | 5.53 | 5.9 | 3.5 | 5.89 | 5.78 | 4.1 | 4.3 |
| 16.0 | 5.87 | 7.73 | 3.0 | 1.8 | 6.37 | 6.17 | 5.3 | 3.0 | 7.46 | 6.50 | 2.9 | 2.6 |
| 32.0 | 7.69 | 8.87 | 2.1 | 1.2 | 7.79 | 6.97 | 4.7 | 2.6 | 9.44 | 7.59 | 2.1 | 1.5 |
| 48.0 | 9.00 | 8.83 | 1.7 | .9 | 8.77 | 7.15 | 4.4 | 2.4 | 10.84 | 8.24 | 1.7 | 1.1 |
| | DU/DZ | DTH/DZ | 9U*100 | RI | DU/DZ | DTH/DZ | 8U*100 | RI | DU/DZ | DTH/DZ | RU*100 | RI |
| 4.0 | .3114 | .1700 | .816 | .00 | .2881 | .1065 | .332 | .00 | .3695 | .1116 | .291 | .00 |
| 8.0 | .2040 | .1467 | 1.638 | .00 | .1763 | .0944 | .784 | .00 | .2340 | .1028 | .667 | .00 |
| 16.0 | .1336 | .1001 | 2.597 | .00 | .1078 | .0701 | 1.551 | .00 | .1482 | .0854 | 1.378 | .00 |
| 39.2* | .0725 | .0181 | 1.418 | .00 | .0594 | .0250 | 1.960 | .00 | .1187 | .0575 | 2.929 | .00 |

A-43

OBSERVED DATA

| | | DATE 28/02/77 | | TIME 22:00:00 | | DATE 28/02/77 | | TIME 23:00:00 | | DATE 01/03/77 | | TIME 00:00:00 | |
|----------------|--|-----------------------------------|--|-----------------------------------|--|-----------------------------------|--|-----------------------------------|--|-----------------------------------|--|---------------|--|
| | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | | |
| | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | | |
| | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | | |
| | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | | |
| | | 3:LOW 0 MID 3 HI 0 TOTL | | 3:LOW 2 MID 0 HI 1 TOTL | | 3:LOW 2 MID 0 HI 1 TOTL | | 3:LOW 2 MID 0 HI 1 TOTL | | 3:LOW 2 MID 0 HI 1 TOTL | | | |
| CLD (TENTHS) | | :LOW 0 MID 3 HI 0 TOTL | | :LOW 2 MID 0 HI 1 TOTL | | :LOW 2 MID 0 HI 1 TOTL | | :LOW 2 MID 0 HI 1 TOTL | | :LOW 2 MID 0 HI 1 TOTL | | | |
| CLD HT (M) | | :LOW 0 MID 4570 HI | | :LOW 1220 MID | | :LOW 1220 MID | | :LOW 1220 MID | | :LOW 1220 MID | | | |
| EXPONENTS | | :A= -.05 B= -.07 P= .31 | | :A= .15 R= .33 P= .14 | | :A= .15 R= .33 P= .14 | | :A= .15 R= .33 P= .14 | | :A= .15 R= .33 P= .14 | | | |
| NET RADIATION | | : -8.30 MW/CM2 | | : -8.65 MW/CM2 | | : -8.65 MW/CM2 | | : -8.65 MW/CM2 | | : -8.65 MW/CM2 | | | |
| RICHARDSON NO. | | : (4M) .34 (8M) .78(16M) 1.44 | | : (4M) 2.08 (8M) 5.76(16M)11.81 | | : (4M) 2.08 (8M) 5.76(16M)11.81 | | : (4M) 2.08 (8M) 5.76(16M)11.81 | | : (4M) 2.08 (8M) 5.76(16M)11.81 | | | |
| (1/L)*10 | | : (39.192M) .18 (OBSERVED DATA): | | : (39.192M) .93 (OBSERVED DATA): | | : (39.192M) .93 (OBSERVED DATA): | | : (39.192M) .93 (OBSERVED DATA): | | : (39.192M) .93 (OBSERVED DATA): | | | |
| USTAR | | : (4M) 5.21 (8M)12.32 (16M)20.26: | | : (4M)***** (8M)***** (16M)*****: | | : (4M)***** (8M)***** (16M)*****: | | : (4M)***** (8M)***** (16M)*****: | | : (4M)***** (8M)***** (16M)*****: | | | |
| | | : (4M).0475 (8M).0335 (16M).0255: | | : (4M).0166 (8M).0071 (16M).0039: | | : (4M).0166 (8M).0071 (16M).0039: | | : (4M).0166 (8M).0071 (16M).0039: | | : (4M).0166 (8M).0071 (16M).0039: | | | |
| | | | | | | | | | | | | | |
| | | WD WS TEMP SIGA SIGE | | WD WS TEMP SIGA SIGE | | WD WS TEMP SIGA SIGE | | WD WS TEMP SIGA SIGE | | WD WS TEMP SIGA SIGE | | | |
| HEIGHT (M) | | :(DEG) (M/S) (C) (DEG) (DEG) | | :(DEG) (M/S) (C) (DEG) (DEG) | | :(DEG) (M/S) (C) (DEG) (DEG) | | :(DEG) (M/S) (C) (DEG) (DEG) | | :(DEG) (M/S) (C) (DEG) (DEG) | | | |
| 1. | | : 79. 1.26 3.60 13.5 | | : 102. 1.49 4.37 25.0 | | : 102. 1.49 4.37 25.0 | | : 102. 1.49 4.37 25.0 | | : 102. 1.49 4.37 25.0 | | | |
| 2. | | : 74. 1.34 4.00 13.8 | | : 91. 1.78 5.13 21.3 | | : 91. 1.78 5.13 21.3 | | : 91. 1.78 5.13 21.3 | | : 91. 1.78 5.13 21.3 | | | |
| 4. | | : 89. 1.33 4.11 16.0 | | : 8.4: 104. 5.69 21.7 | | : 8.4: 104. 5.69 21.7 | | : 8.4: 104. 5.69 21.7 | | : 8.4: 104. 5.69 21.7 | | | |
| 8. | | : 106. 1.65 4.41 14.8 | | : 10.4: 109. 6.52 34.1 | | : 10.4: 109. 6.52 34.1 | | : 10.4: 109. 6.52 34.1 | | : 10.4: 109. 6.52 34.1 | | | |
| 16. | | : 124. 2.43 4.77 13.3 | | : 8.3: 125. 7.10 33.8 | | : 8.3: 125. 7.10 33.8 | | : 8.3: 125. 7.10 33.8 | | : 8.3: 125. 7.10 33.8 | | | |
| 32. | | : 139. 3.54 5.01 11.0 | | : 7.8: 162. 7.09 34.1 | | : 7.8: 162. 7.09 34.1 | | : 7.8: 162. 7.09 34.1 | | : 7.8: 162. 7.09 34.1 | | | |
| 48. | | | | | | | | | | | | | |

LEAST SQUARES FITTED DATA

| | | WD WS TEMP SIGA SIGE | | WD WS TEMP SIGA SIGE | | WD WS TEMP SIGA SIGE | | WD WS TEMP SIGA SIGE | | WD WS TEMP SIGA SIGE | | | |
|------------|--|--------------------------|--|--------------------------|--|--------------------------|--|--------------------------|--|--------------------------|--|--|--|
| HEIGHT (M) | | :(M/S) (C) (DEG) (DEG) | | :(M/S) (C) (DEG) (DEG) | | :(M/S) (C) (DEG) (DEG) | | :(M/S) (C) (DEG) (DEG) | | :(M/S) (C) (DEG) (DEG) | | | |
| 1.0 | | : .86 3.42 15.3 10.7 | | : 1.40 4.21 19.4 6.5 | | : 1.40 4.21 19.4 6.5 | | : 1.40 4.21 19.4 6.5 | | : 1.40 4.21 19.4 6.5 | | | |
| 2.0 | | : 1.06 3.50 14.8 10.2 | | : 1.54 4.40 21.5 8.1 | | : 1.54 4.40 21.5 8.1 | | : 1.54 4.40 21.5 8.1 | | : 1.54 4.40 21.5 8.1 | | | |
| 4.0 | | : 1.32 3.66 14.3 9.7 | | : 1.70 4.76 23.9 10.2 | | : 1.70 4.76 23.9 10.2 | | : 1.70 4.76 23.9 10.2 | | : 1.70 4.76 23.9 10.2 | | | |
| 8.0 | | : 1.63 3.95 13.8 9.3 | | : 1.87 5.41 26.5 12.8 | | : 1.87 5.41 26.5 12.8 | | : 1.87 5.41 26.5 12.8 | | : 1.87 5.41 26.5 12.8 | | | |
| 16.0 | | : 2.01 4.42 13.4 8.9 | | : 2.06 6.44 29.4 16.0 | | : 2.06 6.44 29.4 16.0 | | : 2.06 6.44 29.4 16.0 | | : 2.06 6.44 29.4 16.0 | | | |
| 32.0 | | : 2.48 4.95 12.9 8.5 | | : 2.27 7.43 32.6 20.1 | | : 2.27 7.43 32.6 20.1 | | : 2.27 7.43 32.6 20.1 | | : 2.27 7.43 32.6 20.1 | | | |
| 48.0 | | : 2.81 4.93 12.7 8.2 | | : 2.41 6.96 34.7 23.0 | | : 2.41 6.96 34.7 23.0 | | : 2.41 6.96 34.7 23.0 | | : 2.41 6.96 34.7 23.0 | | | |
| | | DU/DZ DTH/DZ BU*100 RI | | DU/DZ DTH/DZ BU*100 RI | | DU/DZ DTH/DZ BU*100 RI | | DU/DZ DTH/DZ BU*100 RI | | DU/DZ DTH/DZ BU*100 RI | | | |
| 4.0 | | : .0936 .0843 2.762 .00 | | : .0550 .1788 3.489 .00 | | : .0550 .1788 3.489 .00 | | : .0550 .1788 3.489 .00 | | : .0550 .1788 3.489 .00 | | | |
| 8.0 | | : .0578 .0735 6.300 .00 | | : .0303 .1506 9.657 .00 | | : .0303 .1506 9.657 .00 | | : .0303 .1506 9.657 .00 | | : .0303 .1506 9.657 .00 | | | |
| 16.0 | | : .0357 .0520 11.637 .00 | | : .0167 .0940 19.800 .00 | | : .0167 .0940 19.800 .00 | | : .0167 .0940 19.800 .00 | | : .0167 .0940 19.800 .00 | | | |
| 39.2* | | : .0694 .0250 15.776 .00 | | : .0187 .0094 9.316 .00 | | : .0187 .0094 9.316 .00 | | : .0187 .0094 9.316 .00 | | : .0187 .0094 9.316 .00 | | | |

* OBSERVED DATA

| | DATE 01/03/77 | TIME 01:00:00 | DATE 01/03/77 | TIME 02:00:00 | DATE 01/03/77 | TIME 03:00:00 |
|----------------|-----------------|---------------------|-----------------|---------------------|-----------------|----------------------|
| CLD (TENTHS) | WEATHER | 2.8 | WEATHER | 1.7 | WEATHER | |
| | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | 1.1 |
| | DEW POINT DEG C | -13.6 | DEW POINT DEG C | -7.2 | DEW POINT DEG C | -6.7 |
| | VISIBILITY (MI) | 20 | VISIBILITY (MI) | 20 | VISIBILITY (MI) | 20 |
| LOW | MID | 6 HI | 2 TOTL | 8:LOW | MID | 10:LOW |
| CLD HT (M) | MID | 3050 HI | 6095 | LOW | MID | 3050 HI |
| EXPONENTS | A = | -0.17 B = | -0.44 P = | .38 | A = | -0.17 B = |
| NET RADIATION | | -2.86 MW/CM2 | | | | -1.81 MW/CM2 |
| RICHARDSON NO. | (4M) | .05 (8M) | .15 (16M) | .52 | (4M) | .05 (8M) |
| | (39.192M) | .24 (OBSERVED DATA) | (39.192M) | .01 (OBSERVED DATA) | (39.192M) | -.06 (OBSERVED DATA) |
| (1/L)*10 | (4M) | .22 (8M) | .63 (16M) | 2.88 | (4M) | .20 (8M) |
| USTAR | (4M) | .1145 (8M) | .1063 (16M) | .0757 | (4M) | .1724 (8M) |
| | | | | | (4M) | .4429 (8M) |
| | | | | | (4M) | .4232 (16M) |
| | | | | | (4M) | .4041 |

| HEIGHT (M) | : WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE |
|------------|--------|-------|------|-------|-------------|------|-------|------|-------|-------------|------|-------|------|-------|-------------|
| | :(DEG) | (M/S) | (C) | (DEG) | (DEG):(DEG) | | (M/S) | (C) | (DEG) | (DEG):(DEG) | | (M/S) | (C) | (DEG) | (DEG):(DEG) |
| 1. | : | 1.48 | .00 | 11.6 | : | 327. | 2.21 | -35 | 7.7 | : | 357. | 5.30 | -31 | 7.2 | : |
| 2. | : | 1.87 | .17 | 12.9 | : | 317. | 2.78 | -21 | 6.8 | : | 347. | 6.10 | -24 | 5.9 | : |
| 4. | : | 2.05 | .29 | 12.4 | : | 323. | 3.08 | -10 | 6.7 | : | 354. | 6.87 | -21 | 5.9 | : |
| 8. | : | 2.48 | .65 | 13.1 | : | 311. | 3.69 | -08 | 6.7 | : | 341. | 7.68 | -27 | 5.9 | 4.8: |
| 16. | : | 3.63 | 1.53 | 8.8 | : | 310. | 4.41 | .10 | 7.7 | : | 343. | 8.61 | -23 | 5.0 | 4.2: |
| 32. | : | 5.68 | 3.17 | 6.4 | : | 322. | 5.66 | .13 | 7.1 | : | 357. | 9.06 | -35 | 4.5 | 3.4: |
| 48. | : | | | | : | | | .00 | 7.8 | : | | | -53 | 3.9 | 3.2: |

| HEIGHT (M) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : |
|--------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|-----------------|
| 1.0 : | 1.04 : | .12 : | 15.7 : | 20.7 : | 1.82 : | -26 : | 7.1 : | 4.6 : | 4.79 : | -26 : | 8.0 : | 8.0 : |
| 2.0 : | 1.35 : | .14 : | 14.0 : | 15.2 : | 2.20 : | -23 : | 7.1 : | 4.3 : | 5.38 : | -26 : | 7.1 : | 6.8 : |
| 4.0 : | 1.76 : | .18 : | 12.4 : | 11.2 : | 2.65 : | -17 : | 7.2 : | 4.0 : | 6.05 : | -25 : | 6.3 : | 5.7 : |
| 8.0 : | 2.30 : | .29 : | 11.1 : | 8.2 : | 3.20 : | -07 : | 7.2 : | 3.8 : | 6.80 : | -24 : | 5.6 : | 4.9 : |
| 16.0 : | 2.99 : | .60 : | 9.9 : | 6.0 : | 3.86 : | .08 : | 7.3 : | 3.6 : | 7.64 : | -25 : | 4.9 : | 4.1 : |
| 32.0 : | 3.90 : | 1.61 : | 8.8 : | 4.4 : | 4.66 : | .17 : | 7.4 : | 3.3 : | 8.58 : | -34 : | 4.4 : | 3.5 : |
| 48.0 : | 4.55 : | 3.14 : | 8.2 : | 3.7 : | 5.20 : | -01 : | 7.4 : | 3.2 : | 9.18 : | -54 : | 4.1 : | 3.1 : |
| ----- | | | | | | | | | | | | |
| : | DU/DZ : | DTH/DZ : | BU*100 : | RI : | DU/DZ : | DTH/DZ : | BU*100 : | RI : | DU/DZ : | DTH/DZ : | BU*100 : | RI : |
| ----- | | | | | | | | | | | | |
| 4.0 : | .1573 : | .0345 : | .638 : | .00 : | .1673 : | .0364 : | .298 : | .00 : | .2355 : | .0127 : | .020 : | .00 : |
| 8.0 : | .1025 : | .0447 : | 1.945 : | .00 : | .1009 : | .0310 : | .696 : | .00 : | .1323 : | .0106 : | .053 : | .00 : |
| 16.0 : | .0668 : | .0651 : | 6.661 : | .00 : | .0609 : | .0201 : | 1.241 : | .00 : | .0743 : | .0062 : | .098 : | .00 : |
| 39.2* : | .1281 : | .1125 : | 29.678 : | .00 : | .0781 : | .0019 : | .418 : | .00 : | .0281 : | -.0012 : | -.089 : | -.06 : |

A-45

[illegible]

| HEIGHT (M) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : |
|--------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|-----------------|
| 1.0 : | 6.01 | -1.45 | 8.7 | 7.3 | 4.93 | -2.57 | 7.4 | 5.8 | 3.66 | | | 7.2 |
| 2.0 : | 6.69 | -1.46 | 7.2 | 6.2 | 5.48 | -2.57 | 6.6 | 5.2 | 4.12 | | | 6.5 |
| 4.0 : | 7.45 | -1.48 | 5.9 | 5.2 | 6.08 | -2.58 | 5.8 | 4.7 | 4.65 | | | 5.8 |
| 8.0 : | 8.29 | -1.52 | 4.9 | 4.4 | 6.75 | -2.60 | 5.2 | 4.3 | 5.24 | | | 5.2 |
| 16.0 : | 9.24 | -1.60 | 4.0 | 3.7 | 7.49 | -2.66 | 4.6 | 3.9 | 5.91 | | | 4.7 |
| 32.0 : | 10.28 | -1.79 | 3.3 | 3.2 | 8.31 | -2.80 | 4.1 | 3.5 | 6.66 | | | 4.2 |
| 48.0 : | 10.95 | -2.01 | 3.0 | 2.9 | 8.84 | -2.98 | 3.9 | 3.3 | 7.14 | | | 4.0 |
| ----- | | | | | | | | | | | | |
| : | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI |
| ----- | | | | | | | | | | | | |
| 4.0 : | 2673 | .0004 | .000 | .00 | .2119 | .0045 | .007 | .00 | .1858 | | | |
| 8.0 : | 1488 | -.0002 | -.001 | -.00 | .1176 | .0037 | .019 | .00 | .0590 | | | |
| 16.0 : | 0829 | -.0014 | -.015 | -.00 | .0653 | .0019 | .032 | .00 | .1047 | | | |
| 39.2* : | 0231 | -.0044 | -.221 | -.30 | .0281 | -.0031 | -.244 | -.14 | .0369 | | | |

A-46

OBSERVED DATA

| | | | | | | | | | | | |
|----------------|-----------------------------|------------------------------|------------------------------|------------------|-------------------|------------------|-----------|----------|----------|------------|------------|
| | : DATE 01/03/77 | TIME 07:00:22 | : DATE 01/03/77 | TIME 08:00:00 | : DATE 01/03/77 | TIME 09:00:00 | | | | | |
| | : WEATHER | S- | : WEATHER | | : WEATHER | S- | | | | | |
| | : TEMP DEG C | -2.3 | : TEMP DEG C | -2.2 | : TEMP DEG C | -2.0 | | | | | |
| | : DEW POINT DEG C | -4.5 | : DEW POINT DEG C | -5.3 | : DEW POINT DEG C | -4.6 | | | | | |
| | : VISIBILITY (MI) | 7 | : VISIBILITY (MI) | 5 | : VISIBILITY (MI) | 5 | | | | | |
| CLD (TENTHS) | :LOW 10 MID HI | TOTL 10 | :LOW 10 MID HI | TOTL 10 | :LOW 10 MID HI | TOTL 10 | | | | | |
| CLD HT (M) | : LOW 610 MID HI | : LOW 610 MID HI | : LOW 610 MID HI | : LOW 610 MID HI | : LOW 610 MID HI | : LOW 610 MID HI | | | | | |
| EXPONENTS | : A = -.17 B = -.16 P = .16 | : A = -.12 B = -.09 P = .21 | : A = -.19 B = -.13 P = .20 | | | | | | | | |
| NET RADIATION | : 4.67 MW/CM2 | : 7.95 MW/CM2 | : 7.25 MW/CM2 | | | | | | | | |
| RICHARDSON NO. | : (4M) | : (4M) | : (4M) | | | | | | | | |
| | : (39.192M) | : (OBSERVED DATA): (39.192M) | : (OBSERVED DATA): (39.192M) | | | | | | | | |
| (1/L)*10 | : (4M) | : (4M) | : (4M) | | | | | | | | |
| USTAR | : (4M) | : (4M) | : (4M) | | | | | | | | |
| | : (8M) | : (8M) | : (8M) | | | | | | | | |
| | : (16M) | : (16M) | : (16M) | | | | | | | | |
| | : (8M) | : (8M) | : (8M) | | | | | | | | |
| | : (16M) | : (16M) | : (16M) | | | | | | | | |
| | : (4M) | : (4M) | : (4M) | | | | | | | | |
| | : (8M) | : (8M) | : (8M) | | | | | | | | |
| | : (16M) | : (16M) | : (16M) | | | | | | | | |
| HEIGHT (M) | : WD (DEG) | WS (M/S) | TEMP (C) | WD (DEG) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | WD (DEG) | SIGA (DEG) | SIGE (DEG) |
| 2. | : 355. | 4.08 | 7.1 | : 305. | 1.98 | 8.7 | : 316. | 2.98 | 6.9 | | |
| 4. | : 345. | 4.61 | 6.2 | : 293. | 2.82 | 7.7 | : 305. | 4.06 | 5.8 | | |
| 8. | : 353. | 5.17 | 5.5 | 4.8: 300. | 2.90 | 7.1 | 4.5: 312. | 4.50 | 5.5 | 4.4: | |
| 16. | : 340. | 5.69 | 4.4 | 4.5: 288. | 3.39 | 6.3 | 4.1: 300. | 4.63 | 4.5 | 3.9: | |
| 32. | : 342. | 6.31 | 4.6 | 3.7: 290. | 3.67 | 5.8 | 3.6: 301. | 5.58 | 4.0 | 3.4: | |
| 48. | : 355. | 6.87 | 4.1 | 3.7: 302. | 4.27 | 6.1 | 4.0: 312. | 6.04 | 3.8 | 3.6: | |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WS (M/S) | TEMP (C) | WD (DEG) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | WD (DEG) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | WD (DEG) | SIGA (DEG) | SIGE (DEG) |
|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|
| 1.0 | 3.68 | 7.8 | 6.8 | 1.87 | 9.2 | 5.3 | 2.82 | 7.8 | 5.7 | | | | | | |
| 2.0 | 4.11 | 7.0 | 6.0 | 2.17 | 8.5 | 5.0 | 3.24 | 6.8 | 5.2 | | | | | | |
| 4.0 | 4.59 | 6.2 | 5.4 | 2.51 | 7.8 | 4.7 | 3.71 | 6.0 | 4.7 | | | | | | |
| 8.0 | 5.12 | 5.5 | 4.8 | 2.90 | 7.1 | 4.4 | 4.26 | 5.3 | 4.3 | | | | | | |
| 16.0 | 5.72 | 4.9 | 4.3 | 3.35 | 6.5 | 4.1 | 4.88 | 4.6 | 4.0 | | | | | | |
| 32.0 | 6.39 | 4.3 | 3.9 | 3.87 | 6.0 | 3.9 | 5.60 | 4.1 | 3.6 | | | | | | |
| 48.0 | 6.81 | 4.0 | 3.6 | 4.22 | 5.7 | 3.7 | 6.07 | 3.8 | 3.4 | | | | | | |
| | DU/DZ | OTH/DZ | BU*100 | RI | DU/DZ | OTH/DZ | BU*100 | RI | DU/DZ | OTH/DZ | BU*100 | RI | | | |
| 4.0 | .1691 | | | .1216 | | | .1704 | | | | | | | | |
| 8.0 | .0944 | | | .0703 | | | .0977 | | | | | | | | |
| 16.0 | .0527 | | | .0407 | | | .0560 | | | | | | | | |
| 39.2* | .0350 | | | .0375 | | | .0287 | | | | | | | | |

* OBSERVED DATA

OBSERVED DATA

| DATE 01/03/77 | TIME 10:00:00 | DATE 01/03/77 | TIME 11:00:00 | DATE 01/03/77 | TIME 12:00:00 |
|---|--|--|--|--|---|
| WEATHER S- | WEATHER S- | WEATHER S- | WEATHER S- | WEATHER S- | WEATHER S- |
| TEMP DEG C -1.1 | TEMP DEG C -1.0 | TEMP DEG C -1.0 | TEMP DEG C -0.1 | TEMP DEG C -0.1 | TEMP DEG C -0.1 |
| DEW POINT DEG C -3.8 | DEW POINT DEG C -1.8 | DEW POINT DEG C -1.8 | DEW POINT DEG C -2.3 | DEW POINT DEG C -2.3 | DEW POINT DEG C -2.3 |
| VISIBILITY (MI) .87 | VISIBILITY (MI) 5 | VISIBILITY (MI) 5 | VISIBILITY (MI) 30 | VISIBILITY (MI) 30 | VISIBILITY (MI) 30 |
| CLD (TENTHS) : LOW 10 MID HI | TOTL 10:LOW 6 MID 4 HI | TOTL 10:LOW 6 MID 4 HI | TOTL 10:LOW 6 MID 4 HI | TOTL 10:LOW 6 MID 4 HI | TOTL 10:LOW 6 MID 4 HI |
| CLD HT (M) : LOW 610 MID 3050 HI | LOW 610 MID 3050 HI | LOW 610 MID 3050 HI | LOW 610 MID 3050 HI | LOW 610 MID 3050 HI | LOW 610 MID 3050 HI |
| EXPONENTS : A = -.18 B = -.17 P = .16 | A = -.19 B = -.09 P = .11 | A = -.19 B = -.09 P = .11 | A = -.03 B = .10 P = .08 | A = -.03 B = .10 P = .08 | A = -.03 B = .10 P = .08 |
| NET RADIATION : 9.07 MW/CM2 | 12.69 MW/CM2 | 12.69 MW/CM2 | 19.18 MW/CM2 | 19.18 MW/CM2 | 19.18 MW/CM2 |
| RICHARDSON NO. : (4M) (8M) (16M) | (4M) (8M) (16M) | (4M) (8M) (16M) | (4M) (8M) (16M) | (4M) (8M) (16M) | (4M) (8M) (16M) |
| (1/L)*10 : (39.192M) (OBSERVED DATA) : (39.192M) | (39.192M) (OBSERVED DATA) : (39.192M) | (39.192M) (OBSERVED DATA) : (39.192M) | (39.192M) (OBSERVED DATA) : (39.192M) | (39.192M) (OBSERVED DATA) : (39.192M) | (39.192M) (OBSERVED DATA) : (39.192M) |
| USTAR : (4M) (8M) (16M) | (4M) (8M) (16M) | (4M) (8M) (16M) | (4M) (8M) (16M) | (4M) (8M) (16M) | (4M) (8M) (16M) |
| USTAR : (4M) (8M) (16M) | (4M) (8M) (16M) | (4M) (8M) (16M) | (4M) (8M) (16M) | (4M) (8M) (16M) | (4M) (8M) (16M) |
| HEIGHT (M) : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : |
| 1. : 350. 5.29 6.6 6.6 | 1.72 -2.10 6.8 | 1.72 -2.10 6.8 | 1.75 -1.21 8.6 | 1.75 -1.21 8.6 | 1.75 -1.21 8.6 |
| 2. : 340. 6.03 6.5 6.5 | 3.53 3.53 | 3.53 3.53 | 2.01 -1.41 8.7 | 2.01 -1.41 8.7 | 2.01 -1.41 8.7 |
| 4. : 346. 6.71 5.7 5.7 | 4.9: 4.9 | 4.9: 4.9 | 2.17 -1.44 8.1 | 2.17 -1.44 8.1 | 2.17 -1.44 8.1 |
| 8. : 332. 7.41 4.1 4.1 | 4.3: 347. 4.13 -2.80 | 4.3: 347. 4.13 -2.80 | 2.26 -2.01 6.0 | 2.26 -2.01 6.0 | 2.26 -2.01 6.0 |
| 16. : 331. 8.24 4.2 4.2 | 3.9: 346. 4.30 | 3.9: 346. 4.30 | 2.28 7.4 | 2.28 7.4 | 2.28 7.4 |
| 32. : 342. 8.73 4.1 4.1 | 3.6: 358. 4.48 | 3.6: 358. 4.48 | 2.26 9.2 | 2.26 9.2 | 2.26 9.2 |
| 48. : 342. 8.73 4.1 4.1 | 3.6: 358. 4.48 | 3.6: 358. 4.48 | 2.26 9.2 | 2.26 9.2 | 2.26 9.2 |

LEAST SQUARES FITTED DATA

| HEIGHT (M) : | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|---------------|----------|----------|------------|------------|----------|----------|------------|------------|
| 1.0 : 4.81 | 7.8 | 6.9 | 6.9 | 6.9 | 3.02 | 8.2 | 5.8 | 5.8 |
| 2.0 : 5.36 | 6.9 | 6.2 | 6.2 | 6.2 | 3.25 | 7.2 | 5.4 | 5.4 |
| 4.0 : 5.97 | 6.1 | 5.5 | 5.5 | 5.5 | 3.50 | 6.3 | 5.1 | 5.1 |
| 8.0 : 6.65 | 5.4 | 4.9 | 4.9 | 4.9 | 3.76 | 5.5 | 4.8 | 4.8 |
| 16.0 : 7.40 | 4.7 | 4.4 | 4.4 | 4.4 | 4.05 | 4.8 | 4.5 | 4.5 |
| 32.0 : 8.25 | 4.2 | 3.9 | 3.9 | 3.9 | 4.36 | 4.2 | 4.3 | 4.3 |
| 48.0 : 8.78 | 3.9 | 3.6 | 3.6 | 3.6 | 4.55 | 3.9 | 4.1 | 4.1 |
| DU/DZ | DTM/DZ | BU*100 | RI | DU/DZ | DTM/DZ | BU*100 | RI | DU/DZ |
| 4.0 : .2147 | | | | .0851 | | | | .0344 |
| 8.0 : .1196 | | | | .0458 | | | | .0182 |
| 16.0 : .0666 | | | | .0246 | | | | .0096 |
| 39.2* : .0306 | | | | .0113 | | | | .0013 |

* OBSERVED DATA

OBSERVED DATA

| | DATE 01/03/77 | TIME 13:00:00 | DATE 01/03/77 | TIME 14:00:00 | DATE 01/03/77 | TIME 15:00:00 | |
|----------------|---|---|---|---|---|---|--|
| | WEATHER | | WEATHER | | WEATHER | | |
| | TEMP DEG C | 1.5 | TEMP DEG C | 1.1 | TEMP DEG C | 4.3 | |
| | DEW POINT DEG C | -1.4 | DEW POINT DEG C | -1.7 | DEW POINT DEG C | -0.1 | |
| | VISIBILITY (MI) | 10 | VISIBILITY (MI) | 30 | VISIBILITY (MI) | 30 | |
| CLD (TENTHS) | LOW 6 MID 4 HI | TOTL 10:LOW 3 MID 7 HI | TOTL 10:LOW 3 MID 7 HI | TOTL 10:LOW 3 MID 7 HI | TOTL 10:LOW 3 MID 7 HI | TOTL 10:LOW 3 MID 7 HI | |
| CLD HT (M) | LOW 610 MID 3050 HI | LOW 610 MID 2135 HI | LOW 610 MID 2135 HI | LOW 610 MID 2135 HI | LOW 610 MID 2135 HI | LOW 610 MID 2135 HI | |
| EXPONENTS | A = -.02 B = .24 P = .07 | A = -.11 B = .08 P = .12 | A = -.11 B = .08 P = .12 | A = -.11 B = .08 P = .12 | A = -.07 B = .11 P = .10 | A = -.07 B = .11 P = .10 | |
| NET RADIATION | 22.46 MW/CM2 | 29.72 MW/CM2 | 29.72 MW/CM2 | 29.72 MW/CM2 | 25.74 MW/CM2 | 25.74 MW/CM2 | |
| RICHARDSON NO. | (4M)-3.83 (8M)-7.65 (16M)18.39 | (4M) -.59 (8M)-1.45 (16M)-1.19 | (4M) -.59 (8M)-1.45 (16M)-1.19 | (4M) -.59 (8M)-1.45 (16M)-1.19 | (4M) -.55 (8M)-1.51 (16M)-2.40 | (4M) -.55 (8M)-1.51 (16M)-2.40 | |
| | (39.192M)***** (OBSERVED DATA): | (39.192M)46.50 (OBSERVED DATA): | (39.192M)46.50 (OBSERVED DATA): | (39.192M)46.50 (OBSERVED DATA): | (39.192M)67.72 (OBSERVED DATA): | (39.192M)67.72 (OBSERVED DATA): | |
| (1/L)*10 | (4M)-10.1 (8M)-11.3 (16M)-12.1 | (4M)-1.58 (8M)-1.93 (16M) -.79 | (4M)-1.58 (8M)-1.93 (16M) -.79 | (4M)-1.58 (8M)-1.93 (16M) -.79 | (4M)-1.49 (8M)-2.00 (16M)-1.58 | (4M)-1.49 (8M)-2.00 (16M)-1.58 | |
| USTAR | (4M).2176 (8M).2102 (16M).0000 | (4M).2624 (8M).2664 (16M).2406 | (4M).2624 (8M).2664 (16M).2406 | (4M).2624 (8M).2664 (16M).2406 | (4M).3414 (8M).3480 (16M).3375 | (4M).3414 (8M).3480 (16M).3375 | |
| HEIGHT (M) | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | |
| | (DEG) (M/S) (C) (DEG) (DEG) (DEG) (DEG) (DEG) (DEG) (DEG) | (DEG) (M/S) (C) (DEG) (DEG) (DEG) (DEG) (DEG) (DEG) (DEG) | (DEG) (M/S) (C) (DEG) (DEG) (DEG) (DEG) (DEG) (DEG) (DEG) | (DEG) (M/S) (C) (DEG) (DEG) (DEG) (DEG) (DEG) (DEG) (DEG) | (DEG) (M/S) (C) (DEG) (DEG) (DEG) (DEG) (DEG) (DEG) (DEG) | (DEG) (M/S) (C) (DEG) (DEG) (DEG) (DEG) (DEG) (DEG) (DEG) | |
| 1. | -70 | -23 | -23 | -23 | -96 | -96 | |
| 2. | 63. 1.55 -81 17.7 | 35. 2.51 -24 14.3 | 35. 2.51 -24 14.3 | 35. 2.51 -24 14.3 | 26. 3.36 -.62 12.4 | 26. 3.36 -.62 12.4 | |
| 4. | 53. 1.75 -1.08 15.3 | 25. 2.86 -.62 13.2 | 25. 2.86 -.62 13.2 | 25. 2.86 -.62 13.2 | 16. 3.76 -.40 11.8 | 16. 3.76 -.40 11.8 | |
| 8. | 63. 1.86 -1.18 14.9 | 33. 3.16 -.83 11.9 | 33. 3.16 -.83 11.9 | 33. 3.16 -.83 11.9 | 24. 4.01 -.18 11.4 | 24. 4.01 -.18 11.4 | |
| 16. | 51. 1.91 -1.66 15.3 | 19. 3.39 -1.50 10.8 | 19. 3.39 -1.50 10.8 | 19. 3.39 -1.50 10.8 | 11. 4.32 -.74 11.2 | 11. 4.32 -.74 11.2 | |
| 32. | 58. 1.97 -.91 15.6 | 78. 3.54 -1.54 | 78. 3.54 -1.54 | 78. 3.54 -1.54 | 17. 4.59 -1.36 | 17. 4.59 -1.36 | |
| 48. | 63. 1.93 15.9 14.5 | 32. 3.67 10.3 7.9 | 32. 3.67 10.3 7.9 | 32. 3.67 10.3 7.9 | 23. 4.68 9.8 8.1 | 23. 4.68 9.8 8.1 | |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WS | TEMP | SIGA | SIGE | WS | TEMP | SIGA | SIGE | WS | TEMP | SIGA | SIGE |
|------------|--------|--------|---------|-------|-------|--------|--------|-------|-------|--------|--------|-------|
| | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) |
| 1.0 | 1.56 | -70 | 16.6 | 5.8 | 2.40 | -19 | 15.2 | 5.7 | 3.21 | .84 | 13.1 | 5.1 |
| 2.0 | 1.63 | -81 | 16.3 | 6.8 | 2.60 | -31 | 14.1 | 6.0 | 3.44 | .69 | 12.5 | 5.5 |
| 4.0 | 1.71 | -1.00 | 16.1 | 8.1 | 2.82 | -.53 | 13.1 | 6.4 | 3.70 | .42 | 11.9 | 5.9 |
| 8.0 | 1.79 | -1.31 | 15.9 | 9.5 | 3.05 | -.92 | 12.1 | 6.7 | 3.97 | -.08 | 11.4 | 6.3 |
| 16.0 | 1.87 | -1.60 | 15.6 | 11.2 | 3.31 | -1.46 | 11.3 | 7.1 | 4.26 | -.83 | 10.8 | 6.8 |
| 32.0 | 1.96 | -.92 | 15.4 | 13.3 | 3.58 | -1.55 | 10.4 | 7.5 | 4.58 | -1.35 | 10.3 | 7.3 |
| 48.0 | 2.01 | 1.45 | 15.3 | 14.6 | 3.76 | -.34 | 10.0 | 7.7 | 4.77 | -.57 | 10.1 | 7.7 |
| | DU/DZ | OTH/DZ | BU*100 | RI | DU/DZ | OTH/DZ | BU*100 | RI | DU/DZ | OTH/DZ | BU*100 | RI |
| 4.0 | .0261 | -.0727 | -1.438 | -.23 | .0751 | -.0922 | -.666 | -.17 | .0879 | -.1188 | -.498 | -.15 |
| 8.0 | .0137 | -.0398 | -2.873 | -1.23 | .0407 | -.0668 | -1.648 | -1.45 | .0472 | -.0934 | -1.362 | -.92 |
| 16.0 | .0072 | .0262 | 6.904 | .00 | .0220 | -.0160 | -1.347 | -1.86 | .0253 | -.0428 | -2.168 | -3.39 |
| 39.2* | -.0025 | .1574 | 227.556 | .00 | .0081 | .0853 | 36.413 | .00 | .0056 | .0595 | 15.350 | .00 |

* OBSERVED DATA

OBSERVED DATA

| DATE 01/03/77 | | TIME 16:00:00 | | DATE 01/03/77 | | TIME 17:00:00 | | DATE 01/03/77 | | TIME 18:00:00 | |
|--|--|---|--|---|--|---|--|---|--|---|--|
| WEATHER | | TEMP DEG C 3.5 | | WEATHER | | TEMP DEG C 2.5 | | WEATHER | | TEMP DEG C -2.2 | |
| DEW POINT DEG C -1.4 | | DEW POINT DEG C -8.1 | | DEW POINT DEG C -8.1 | | DEW POINT DEG C -8.1 | | DEW POINT DEG C -8.1 | | DEW POINT DEG C -8.1 | |
| VISIBILITY (MI) 30 | | VISIBILITY (MI) 20 | | VISIBILITY (MI) 20 | | VISIBILITY (MI) 20 | | VISIBILITY (MI) 20 | | VISIBILITY (MI) 20 | |
| CLD (TENTHS) :LOW 2 MID 4 HI | | TOTAL 6:LOW 6 MID 3 HI | | TOTAL 6:LOW 6 MID 3 HI | | TOTAL 6:LOW 6 MID 3 HI | | TOTAL 6:LOW 6 MID 3 HI | | TOTAL 6:LOW 6 MID 3 HI | |
| CLD HT (M) :LOW 1220 MID 2135 HI | | TOTAL 6:LOW 1220 MID 3050 HI | | TOTAL 6:LOW 1220 MID 3050 HI | | TOTAL 6:LOW 1220 MID 3050 HI | | TOTAL 6:LOW 1220 MID 3050 HI | | TOTAL 6:LOW 1220 MID 3050 HI | |
| EXPONENTS :A= .02 B= .04 P= .13 | | A= -.23 B= .08 P= .21 | | A= -.23 B= .08 P= .21 | | A= -.23 B= .08 P= .21 | | A= -.23 B= .08 P= .21 | | A= -.23 B= .08 P= .21 | |
| NET RADIATION :A= -.035 MW/CM2 | | A= -.035 MW/CM2 | | A= -.035 MW/CM2 | | A= -.035 MW/CM2 | | A= -.035 MW/CM2 | | A= -.035 MW/CM2 | |
| RICHARDSON NO. : (4M) -.11 (8M) -.29 (16M) -.56 | | : (4M) -.56 | | : (4M) -.56 | | : (4M) -.56 | | : (4M) -.56 | | : (4M) -.56 | |
| : (39.192M) .42 (OBSERVED DATA) : (39.192M) | | : (39.192M) | | : (39.192M) | | : (39.192M) | | : (39.192M) | | : (39.192M) | |
| : (4M) -.31 (8M) -.40 (16M) -.38 | | : (4M) -.38 | | : (4M) -.38 | | : (4M) -.38 | | : (4M) -.38 | | : (4M) -.38 | |
| USTAR : (4M) .3490 (8M) .3495 (16M) .3506 | | : (4M) .3506 | | : (4M) .3506 | | : (4M) .3506 | | : (4M) .3506 | | : (4M) .3506 | |
| HEIGHT (M) :WD WS TEMP SIGA SIGE :WD WS TEMP SIGA SIGE | | :WD WS TEMP SIGA SIGE :WD WS TEMP SIGA SIGE | | :WD WS TEMP SIGA SIGE :WD WS TEMP SIGA SIGE | | :WD WS TEMP SIGA SIGE :WD WS TEMP SIGA SIGE | | :WD WS TEMP SIGA SIGE :WD WS TEMP SIGA SIGE | | :WD WS TEMP SIGA SIGE :WD WS TEMP SIGA SIGE | |
| 1. : 335. 3.77 -.17 15.5 | | : 325. 1.03 9.1 | | : 350. 1.95 8.4 | | : 350. 1.95 8.4 | | : 350. 1.95 8.4 | | : 350. 1.95 8.4 | |
| 2. : 324. 4.42 -.07 15.3 | | : 314. 1.32 8.5 | | : 339. 2.30 7.6 | | : 339. 2.30 7.6 | | : 339. 2.30 7.6 | | : 339. 2.30 7.6 | |
| 4. : 332. 4.82 -.40 15.0 | | : 5.0: 320. 1.49 8.2 | | : 4.6: 346. 2.59 7.1 | | : 4.6: 346. 2.59 7.1 | | : 4.6: 346. 2.59 7.1 | | : 4.6: 346. 2.59 7.1 | |
| 8. : 321. 5.33 -.98 14.6 | | : 4.5: 309. 1.68 7.3 | | : 4.6: 334. 3.01 6.1 | | : 4.6: 334. 3.01 6.1 | | : 4.6: 334. 3.01 6.1 | | : 4.6: 334. 3.01 6.1 | |
| 16. : 319. 5.49 -1.30 15.7 | | : 4.9: 307. 1.96 4.6 | | : 4.5: 333. 3.63 6.4 | | : 4.5: 333. 3.63 6.4 | | : 4.5: 333. 3.63 6.4 | | : 4.5: 333. 3.63 6.4 | |
| 32. : 330. 5.98 17.0 | | : 5.3: 320. 2.09 4.7 | | : 5.5: 343. 4.24 7.0 | | : 5.5: 343. 4.24 7.0 | | : 5.5: 343. 4.24 7.0 | | : 5.5: 343. 4.24 7.0 | |
| 48. : 330. 5.98 17.0 | | : 5.3: 320. 2.09 4.7 | | : 5.5: 343. 4.24 7.0 | | : 5.5: 343. 4.24 7.0 | | : 5.5: 343. 4.24 7.0 | | : 5.5: 343. 4.24 7.0 | |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | | WS (M/S) | | TEMP (C) | | SIGA (DEG) | | SIGE (DEG) | | WS (M/S) | | TEMP (C) | | SIGA (DEG) | | SIGE (DEG) | |
|------------|--|----------|--|----------|--|------------|--|------------|--|----------|--|----------|--|------------|--|------------|--|
| 1.0 | | 3.57 | | -.03 | | 14.8 | | 4.3 | | .93 | | 11.8 | | 3.8 | | 1.63 | |
| 2.0 | | 3.92 | | -.10 | | 15.0 | | 4.4 | | 1.08 | | 10.0 | | 4.0 | | 1.92 | |
| 4.0 | | 4.30 | | -.23 | | 15.2 | | 4.6 | | 1.26 | | 8.6 | | 4.2 | | 2.26 | |
| 8.0 | | 4.72 | | -.48 | | 15.4 | | 4.7 | | 1.46 | | 7.3 | | 4.4 | | 2.66 | |
| 16.0 | | 5.18 | | -.88 | | 15.6 | | 4.9 | | 1.69 | | 6.2 | | 4.7 | | 3.13 | |
| 32.0 | | 5.68 | | -1.32 | | 15.8 | | 5.0 | | 1.96 | | 5.3 | | 4.9 | | 3.68 | |
| 48.0 | | 6.00 | | -1.29 | | 16.0 | | 5.1 | | 2.13 | | 4.8 | | 5.1 | | 4.05 | |
| DU/DZ | | DTH/DZ | | BU*100 | | RI | | DU/DZ | | DTH/DZ | | BU*100 | | RI | | DU/DZ | |
| 4.0 | | .1335 | | -.0528 | | -.164 | | -.05 | | .0620 | | | | | | .1232 | |
| 8.0 | | .0732 | | -.0436 | | -.450 | | -.29 | | .0359 | | | | | | .0725 | |
| 16.0 | | .0402 | | -.0250 | | -.860 | | -1.12 | | .0208 | | | | | | .0427 | |
| 39.2* | | .0306 | | .0108 | | 1.840 | | .00 | | .0081 | | | | | | .0381 | |

* OBSERVED DATA

| | DATE 01/03/77 | TIME 22:00:00 | DATE 01/03/77 | TIME 23:00:00 | DATE 02/03/77 | TIME 00:00:00 |
|----------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| CLD (TENTHS) | WEATHER S- | | WEATHER S- | | WEATHER S- | |
| CLD HT (M) | TEMP DEG C -2.7 | | TEMP DEG C -2.6 | | TEMP DEG C -2.7 | |
| EXPOSURE | DEW POINT DEG C -3.8 | | DEW POINT DEG C -3.5 | | DEW POINT DEG C -3.4 | |
| NET RADIATION | VISIBILITY (MI) 4 | | VISIBILITY (MI) 1.5 | | VISIBILITY (MI) .75 | |
| RICHARDSON NO. | TOTAL 10:10 MID HI | TOTAL 10:10 MID HI | TOTAL 10:10 MID HI | TOTAL 10:10 MID HI | TOTAL 10:10 MID HI | TOTAL 10:10 MID HI |
| (1/L)*10 | LOW 24.5 MID | LOW 150 MID | LOW 150 MID | LOW 120 MID | LOW 120 MID | LOW 120 MID |
| USTAR | HI | HI | HI | HI | HI | HI |
| HEIGHT (M) | A = -.26 B = -.23 P = .20 | A = -.20 B = -.23 P = .20 | A = -.20 B = -.23 P = .20 | A = -.24 B = -.23 P = .20 | A = -.24 B = -.23 P = .20 | A = -.24 B = -.23 P = .20 |
| | -1.39 MW/CM2 | 5.02 MW/CM2 | 5.02 MW/CM2 | 5.79 MW/CM2 | 5.79 MW/CM2 | 5.79 MW/CM2 |
| | (8M) | (8M) | (8M) | (8M) | (8M) | (8M) |
| | (4M) | (4M) | (4M) | (4M) | (4M) | (4M) |
| | (39.192M) | (39.192M) | (39.192M) | (39.192M) | (39.192M) | (39.192M) |
| | (OBSERVED DATA): | (OBSERVED DATA): | (OBSERVED DATA): | (OBSERVED DATA): | (OBSERVED DATA): | (OBSERVED DATA): |
| | (16M) | (16M) | (16M) | (16M) | (16M) | (16M) |
| | (8M) | (8M) | (8M) | (8M) | (8M) | (8M) |
| | (4M) | (4M) | (4M) | (4M) | (4M) | (4M) |
| | WS | WS | WS | WS | WS | WS |
| | (M/S) | (M/S) | (M/S) | (M/S) | (M/S) | (M/S) |
| | TEMP (C) | TEMP (C) | TEMP (C) | TEMP (C) | TEMP (C) | TEMP (C) |
| | SIGA (DEG) | SIGA (DEG) | SIGA (DEG) | SIGA (DEG) | SIGA (DEG) | SIGA (DEG) |
| | SIGE (DEG) | SIGE (DEG) | SIGE (DEG) | SIGE (DEG) | SIGE (DEG) | SIGE (DEG) |
| | WD (DEG) | WD (DEG) | WD (DEG) | WD (DEG) | WD (DEG) | WD (DEG) |
| | 2.304 | 2.63 | 7.7 | 305. | 2.46 | 7.3 |
| | 293. | 3.74 | 6.6 | 294. | 3.65 | 6.7 |
| | 298. | 3.87 | 6.1 | 3.8 | 3.80 | 6.3 |
| | 287. | 4.74 | 4.9 | 3.2 | 289. | 5.3 |
| | 288. | 4.71 | 4.2 | 2.8 | 289. | 4.62 |
| | 299. | 5.46 | 3.2 | 2.5 | 299. | 5.10 |
| | 304. | 2.63 | 7.7 | 305. | 2.46 | 7.3 |
| | 293. | 3.74 | 6.6 | 294. | 3.65 | 6.7 |
| | 298. | 3.87 | 6.1 | 3.8 | 3.80 | 6.3 |
| | 287. | 4.74 | 4.9 | 3.2 | 289. | 5.3 |
| | 288. | 4.71 | 4.2 | 2.8 | 289. | 4.62 |
| | 299. | 5.46 | 3.2 | 2.5 | 299. | 5.10 |
| | 304. | 2.63 | 7.7 | 305. | 2.46 | 7.3 |
| | 293. | 3.74 | 6.6 | 294. | 3.65 | 6.7 |
| | 298. | 3.87 | 6.1 | 3.8 | 3.80 | 6.3 |
| | 287. | 4.74 | 4.9 | 3.2 | 289. | 5.3 |
| | 288. | 4.71 | 4.2 | 2.8 | 289. | 4.62 |
| | 299. | 5.46 | 3.2 | 2.5 | 299. | 5.10 |
| | 304. | 2.63 | 7.7 | 305. | 2.46 | 7.3 |
| | 293. | 3.74 | 6.6 | 294. | 3.65 | 6.7 |
| | 298. | 3.87 | 6.1 | 3.8 | 3.80 | 6.3 |
| | 287. | 4.74 | 4.9 | 3.2 | 289. | 5.3 |
| | 288. | 4.71 | 4.2 | 2.8 | 289. | 4.62 |
| | 299. | 5.46 | 3.2 | 2.5 | 299. | 5.10 |
| | 304. | 2.63 | 7.7 | 305. | 2.46 | 7.3 |
| | 293. | 3.74 | 6.6 | 294. | 3.65 | 6.7 |
| | 298. | 3.87 | 6.1 | 3.8 | 3.80 | 6.3 |
| | 287. | 4.74 | 4.9 | 3.2 | 289. | 5.3 |
| | 288. | 4.71 | 4.2 | 2.8 | 289. | 4.62 |
| | 299. | 5.46 | 3.2 | 2.5 | 299. | 5.10 |
| | 304. | 2.63 | 7.7 | 305. | 2.46 | 7.3 |
| | 293. | 3.74 | 6.6 | 294. | 3.65 | 6.7 |
| | 298. | 3.87 | 6.1 | 3.8 | 3.80 | 6.3 |
| | 287. | 4.74 | 4.9 | 3.2 | 289. | 5.3 |
| | 288. | 4.71 | 4.2 | 2.8 | 289. | 4.62 |
| | 299. | 5.46 | 3.2 | 2.5 | 299. | 5.10 |
| | 304. | 2.63 | 7.7 | 305. | 2.46 | 7.3 |
| | 293. | 3.74 | 6.6 | 294. | 3.65 | 6.7 |
| | 298. | 3.87 | 6.1 | 3.8 | 3.80 | 6.3 |
| | 287. | 4.74 | 4.9 | 3.2 | 289. | 5.3 |
| | 288. | 4.71 | 4.2 | 2.8 | 289. | 4.62 |
| | 299. | 5.46 | 3.2 | 2.5 | 299. | 5.10 |

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1.0 | 2.54 | | 9.6 | 6.1 | 2.44 | | 8.9 | 6.7 | 3.52 | | 7.9 | 7.2 |
| 2.0 | 2.92 | | 8.1 | 5.2 | 2.80 | | 7.7 | 5.7 | 4.05 | | 6.7 | 6.1 |
| 4.0 | 3.35 | | 6.8 | 4.4 | 3.22 | | 6.7 | 4.9 | 4.65 | | 5.6 | 5.2 |
| 8.0 | 3.85 | | 5.7 | 3.8 | 3.69 | | 5.8 | 4.2 | 5.36 | | 4.8 | 4.5 |
| 16.0 | 4.42 | | 4.7 | 3.2 | 4.24 | | 5.1 | 3.6 | 6.16 | | 4.0 | 3.8 |
| 32.0 | 5.07 | | 4.0 | 2.8 | 4.87 | | 4.4 | 3.0 | 7.09 | | 3.4 | 3.3 |
| 48.0 | 5.50 | | 3.6 | 2.5 | 5.28 | | 4.1 | 2.8 | 7.70 | | 3.1 | 3.0 |
| | | | | | | | | | | | | |
| | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI |
| 4.0 | .1550 | | | | .1487 | | | | .2185 | | | |
| 8.0 | .0890 | | | | .0854 | | | | .1257 | | | |
| 16.0 | .0511 | | | | .0490 | | | | .0723 | | | |
| 39.2* | .0469 | | | | .0300 | | | | .0275 | | | |

A-52

| | DATE 02/03/77 | TIME 01:00:00 | DATE 02/03/77 | TIME 02:00:00 | DATE 02/03/77 | TIME 03:00:00 |
|----------------|---|---------------|--|---------------|--|---------------|
| CLC (TENTHS) | WEATHER S- | | WEATHER S- | | WEATHER S- | |
| CLD HT (M) | TEMP DEG C -2.2 | | TEMP DEG C -2.9 | | TEMP DEG C -2.9 | |
| EXONENTS | DEW POINT DEG C -3.9 | | DEW POINT DEG C -3.2 | | DEW POINT DEG C -3.2 | |
| NET RADIATION | VISIBILITY (MI) 0.75 | | VISIBILITY (MI) 0.75 | | VISIBILITY (MI) 2 | |
| RICHARDSON NO. | LOW 10 MID HI TOTAL 10:LOW 10 MID HI TOTAL 10:LOW 10 MID HI TOTAL 10: | | LOW 120 MID HI TOTAL 10:LOW 10 MID HI TOTAL 10:LOW 10 MID HI TOTAL 10: | | LOW 305 MID HI TOTAL 10:LOW 10 MID HI TOTAL 10:LOW 10 MID HI TOTAL 10: | |
| (1/L)*10 | A = -.15 B = -.17 P = .23 | | A = -.22 B = -.20 P = .20 | | A = -.26 B = -.18 P = .23 | |
| USTAR | 13.05 MW/CM2 | | 7.25 MW/CM2 | | 4.67 MW/CM2 | |
| HEIGHT (M) | (4M) (16M) (OBSERVED DATA): (39.192M) | | (4M) (16M) (OBSERVED DATA): (39.192M) | | (4M) (16M) (OBSERVED DATA): (39.192M) | |
| | (39.192M) (8M) (16M) (OBSERVED DATA): (39.192M) | | (39.192M) (8M) (16M) (OBSERVED DATA): (39.192M) | | (39.192M) (8M) (16M) (OBSERVED DATA): (39.192M) | |
| | (4M) (8M) (16M) (OBSERVED DATA): (39.192M) | | (4M) (8M) (16M) (OBSERVED DATA): (39.192M) | | (4M) (8M) (16M) (OBSERVED DATA): (39.192M) | |
| | WS TEMP SIGA SGE : WD WS TEMP SIGA SGE : WD WS TEMP SIGA SGE : | | WS TEMP SIGA SGE : WD WS TEMP SIGA SGE : WD WS TEMP SIGA SGE : | | WS TEMP SIGA SGE : WD WS TEMP SIGA SGE : | |

| HEIGHT (M) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : |
|--------------|------------|------------|--------------|--------------|------------|------------|--------------|--------------|------------|------------|--------------|--------------|
| 1.0 : | 3.58 : | | 9.0 : | 6.0 : | 2.67 : | | 9.0 : | 6.5 : | 3.17 : | | 9.2 : | 5.1 : |
| 2.0 : | 4.21 : | | 8.1 : | 5.4 : | 3.07 : | | 7.7 : | 5.6 : | 3.71 : | | 7.7 : | 4.5 : |
| 4.0 : | 4.95 : | | 7.2 : | 4.8 : | 3.52 : | | 6.6 : | 4.9 : | 4.34 : | | 6.4 : | 4.0 : |
| 8.0 : | 5.82 : | | 6.5 : | 4.3 : | 4.04 : | | 5.7 : | 4.2 : | 5.08 : | | 5.4 : | 3.5 : |
| 16.0 : | 6.84 : | | 5.8 : | 3.8 : | 4.64 : | | 4.9 : | 3.7 : | 5.95 : | | 4.5 : | 3.1 : |
| 32.0 : | 8.04 : | | 5.3 : | 3.4 : | 5.33 : | | 4.2 : | 3.2 : | 6.97 : | | 3.7 : | 2.7 : |
| 48.0 : | 8.84 : | | 4.9 : | 3.2 : | 5.78 : | | 3.9 : | 3.0 : | 7.64 : | | 3.4 : | 2.5 : |
| ----- | | | | | | | | | | | | |
| : | DU/DZ : | DTH/DZ : | BU*100 : | RI : | DU/DZ : | DTH/DZ : | BU*100 : | RI : | DU/DZ : | DTH/DZ : | BU*100 : | RI : |
| ----- | | | | | | | | | | | | |
| 4.0 : | .2681 : | | | | .1626 : | | | | .2289 : | | | |
| 8.0 : | .1576 : | | | | .0933 : | | | | .1339 : | | | |
| 16.0 : | .0927 : | | | | .0536 : | | | | .0784 : | | | |
| 39.2* : | .0475 : | | | | .0775 : | | | | .0456 : | | | |

A-53

| | : DATE | 02/03/77 | TIME | 04:00:00 | : DATE | 02/03/77 | TIME | 05:00:00 | : DATE | 02/03/77 | TIME | 06:00:00 |
|----------------|--------|-----------------|--------------------------|-----------|-------------|-----------------|-------------------------|-------------|--------|-----------------|-------------------------|-------------|
| | : | WEATHER | S- | | : | WEATHER | S- | | : | WEATHER | S- | |
| | : | TEMP DEG C | -3.3 | | : | TEMP DEG C | -3.1 | | : | TEMP DEG C | -3.2 | |
| | : | DEW POINT DEG C | -4.6 | | : | DEW POINT DEG C | -4.2 | | : | DEW POINT DEG C | -4.2 | |
| | : | VISIBILITY (MI) | 2 | | : | VISIBILITY (MI) | 1 | | : | VISIBILITY (MI) | 0.50 | |
| CLD (TENTHS) | : | LOW | 10 MID HI | TOTAL | : | LOW | 10 MID HI | TOTAL | : | LOW | 10 MID HI | TOTAL |
| CLD FT (M) | : | LOW | 305 MID | HI | : | LOW | 120 MID | HI | : | LOW | 90 MID | HI |
| EXPCENTS | : | A = -.24 | B = -.17 | P = .22 | : | A = -.21 | B = -.24 | P = .18 | : | A = -.19 | B = -.23 | P = .22 |
| NET RADIATION | : | | 10.88 MW/CM ² | | : | | 4.32 MW/CM ² | | : | | 0.00 MW/CM ² | |
| RICHARDSON NO. | : | (4M) | (8M) | (16M) | : | (4M) | (8M) | (16M) | : | (4M) | (8M) | (16M) |
| | : | (39.192M) | (OBSERVED DATA): | (39.192M) | : | (39.192M) | (OBSERVED DATA): | (39.192M) | : | (39.192M) | (OBSERVED DATA): | (39.192M) |
| (L/L)*10 | : | (4M) | (8M) | (16M) | : | (4M) | (8M) | (16M) | : | (4M) | (8M) | (16M) |
| USTAR | : | (4M) | (8M) | (16M) | : | (4M) | (8M) | (16M) | : | (4M) | (8M) | (16M) |
| HEIGHT (M) | : | WD | WS | TEMP SIGA | SIGE : WD | WS | TEMP SIGA | SIGE : WD | : | WD | WS | TEMP SIGA |
| | : | (DEG) | (M/S) | (C) (DEG) | (DEG):(DEG) | (M/S) | (C) (DEG) | (DEG):(DEG) | : | (M/S) | (C) (DEG) | (DEG):(DEG) |
| 2. | : | 316. | 3.84 | 6.6 | : | 325. | 4.38 | 6.3 | : | 308. | 3.92 | 6.5 |
| 4. | : | 306. | 5.20 | 5.2 | : | 314. | 5.16 | 4.8 | : | 297. | 5.62 | 5.6 |
| 8. | : | 312. | 5.89 | 5.1 | : | 3.8: | 321. | 4.3 | : | 3.8: | 303. | 5.90 |
| 16. | : | 302. | 6.17 | 4.6 | : | 3.3: | 312. | 4.2 | : | 2.9: | 292. | 5.2 |
| 32. | : | 301. | 7.75 | 3.3 | : | 3.0: | 310. | 3.1 | : | 2.9: | 293. | 4.0 |
| 48. | : | 311. | 8.27 | 3.0 | : | 2.8: | 322. | 3.2 | : | 2.3: | 304. | 3.4 |

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1.0 | 3.53 | | 7.8 | 5.3 | 3.91 | | 6.9 | 6.0 | 3.71 | | 7.7 | 5.8 |
| 2.0 | 4.12 | | 6.6 | 4.7 | 4.42 | | 6.0 | 5.1 | 4.31 | | 6.8 | 5.0 |
| 4.0 | 4.81 | | 5.6 | 4.2 | 5.01 | | 5.2 | 4.3 | 5.01 | | 5.9 | 4.2 |
| 8.0 | 5.61 | | 4.8 | 3.8 | 5.66 | | 4.5 | 3.7 | 5.83 | | 5.2 | 3.6 |
| 16.0 | 6.55 | | 4.1 | 3.3 | 6.40 | | 3.9 | 3.1 | 6.77 | | 4.6 | 3.1 |
| 32.0 | 7.64 | | 3.4 | 3.0 | 7.24 | | 3.3 | 2.7 | 7.88 | | 4.0 | 2.6 |
| 48.0 | 8.37 | | 3.1 | 2.8 | 7.78 | | 3.1 | 2.4 | 8.60 | | 3.7 | 2.4 |
| | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI |
| 4.0 | .2487 | | | | .2060 | | | | .2529 | | | |
| 8.0 | .1451 | | | | .1165 | | | | .1470 | | | |
| 16.0 | .0847 | | | | .0659 | | | | .0855 | | | |
| 39.2* | .0325 | | | | .1094 | | | | .0450 | | | |

A-54

OBSERVED DATA

| DATE 02/03/77 | | TIME 10:00:00 | | DATE 02/03/77 | | TIME 11:00:00 | | DATE 02/03/77 | | TIME 12:00:00 | |
|---------------------------|------------|---|------------------|--|------------------|--|------------------|---|------------------|---------------------------|------------------|
| WEATHER H | | WEATHER H | | WEATHER H | | WEATHER H | | WEATHER H | | WEATHER H | |
| TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | |
| DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | |
| VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | |
| LOW | 10 MID HI | TOTL | 10:LOW 10 MID HI | TOTL | 10:LOW 10 MID HI | TOTL | 10:LOW 10 MID HI | TOTL | 10:LOW 10 MID HI | TOTL | 10:LOW 10 MID HI |
| LOW | 305 MID HI | | LOW 1220 MID HI | | LOW 1220 MID HI | | LOW 1220 MID HI | | LOW 1220 MID HI | | LOW 1220 MID HI |
| A = -.29 B = -.38 P = .15 | | A = -.13 B = -.03 P = .14 | | A = -.13 B = -.03 P = .14 | | A = -.22 B = -.11 P = .14 | | A = -.22 B = -.11 P = .14 | | A = -.22 B = -.11 P = .14 | |
| 10.12 MW/CM2 | | 14.44 MW/CM2 | | 14.44 MW/CM2 | | 18.07 MW/CM2 | | 18.07 MW/CM2 | | 18.07 MW/CM2 | |
| RICHARDSON NO. | | (4M) -.08 (8M) -.20(16M) -.36 : (4M) -.07 (8M) -.20(16M) -.42 : (4M) -.02 (8M) -.05(16M) -.12 | | (39.192M) 1.20 (OBSERVED DATA): (39.192M) 1.34 (OBSERVED DATA): (39.192M) .61 (OBSERVED DATA): | | (4M) -.23 (8M) -.29 (16M) -.25 : (4M) -.21 (8M) -.28 (16M) -.29 : (4M) -.06 (8M) -.08 (16M) -.08 | | (4M) .3408 (8M) .3422 (16M) .3440 : (4M) .3986 (8M) .3980 (16M) .4026 : (4M) .6524 (8M) .6376 (16M) .6366 : | | | |
| (1/L)*10 | | | | | | | | | | | |
| USTAR | | | | | | | | | | | |
| HEIGHT (M) | | WD (DEG) | | WS (M/S) | | TEMP (C) | | SIGA (DEG) | | SIGE (DEG) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | TEMP (C) | |
| WD (DEG) | | SIGA (DEG) | | SIGE (DEG) | | WD (DEG) | | WS (M/S) | | | |

LEAST SQUARES FITTED DATA

| DATE 02/03/77 | | | | | | | | | | | | | | | |
|---|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|
| TIME 10:00:00 | | | | | | | | | | | | | | | |
| DATE 02/03/77 | | | | | | | | | | | | | | | |
| TIME 11:00:00 | | | | | | | | | | | | | | | |
| DATE 02/03/77 | | | | | | | | | | | | | | | |
| TIME 12:00:00 | | | | | | | | | | | | | | | |
| WEATHER H | | | | | | | | | | | | | | | |
| WEATHER H | | | | | | | | | | | | | | | |
| CLD (TENTHS) | | | | | | | | | | | | | | | |
| LOW 10 MID HI | | | | | | | | | | | | | | | |
| TOTL 10:LOW 10 MID HI | | | | | | | | | | | | | | | |
| EXPONENTS | | | | | | | | | | | | | | | |
| LOW 305 MID HI | | | | | | | | | | | | | | | |
| LOW 1220 MID HI | | | | | | | | | | | | | | | |
| NET RADIATION | | | | | | | | | | | | | | | |
| A = -0.29 B = -0.38 P = .15 | | | | | | | | | | | | | | | |
| A = -0.13 B = -0.03 P = .14 | | | | | | | | | | | | | | | |
| RICHARDSON NO. | | | | | | | | | | | | | | | |
| 10.12 MW/CM2 | | | | | | | | | | | | | | | |
| 14.44 MW/CM2 | | | | | | | | | | | | | | | |
| (1/L)*10 | | | | | | | | | | | | | | | |
| (4M) -.08 (8M) -.20 (16M) -.36 : (4M) -.07 (8M) -.20 (16M) -.42 : (4M) -.02 (8M) -.05 (16M) -.12 | | | | | | | | | | | | | | | |
| (39.192M) 1.20 (OBSERVED DATA): (39.192M) 1.34 (OBSERVED DATA): (39.192M) .61 (OBSERVED DATA): | | | | | | | | | | | | | | | |
| (4M) -.23 (8M) -.29 (16M) -.25 : (4M) -.21 (8M) -.28 (16M) -.29 : (4M) -.06 (8M) -.08 (16M) -.08 | | | | | | | | | | | | | | | |
| (4M) .3408 (8M) .3422 (16M) .3440 : (4M) .3986 (8M) .3980 (16M) .4026 : (4M) .6324 (8M) .6376 (16M) .6366 : | | | | | | | | | | | | | | | |
| HEIGHT (M) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
| 1.0 | : | 3.46 | -1.09 | 8.7 | 10.5 | : | 4.12 | .21 | 9.2 | 4.6 | : | 6.97 | .84 | 7.9 | 5.5 |
| 2.0 | : | 3.84 | -1.15 | 7.1 | 8.1 | : | 4.54 | .14 | 8.5 | 4.6 | : | 7.69 | .79 | 6.8 | 5.1 |
| 4.0 | : | 4.26 | -1.27 | 5.8 | 6.3 | : | 5.00 | .01 | 7.7 | 4.5 | : | 8.48 | .68 | 5.8 | 4.7 |
| 8.0 | : | 4.73 | -1.50 | 4.8 | 4.8 | : | 5.52 | -.23 | 7.1 | 4.4 | : | 9.36 | .50 | 5.0 | 4.4 |
| 16.0 | : | 5.25 | -1.86 | 3.9 | 3.7 | : | 6.08 | -.64 | 6.5 | 4.3 | : | 10.33 | .16 | 4.3 | 4.1 |
| 32.0 | : | 5.83 | -2.24 | 3.2 | 2.9 | : | 6.71 | -1.16 | 5.9 | 4.2 | : | 11.40 | -.31 | 3.6 | 3.8 |
| 48.0 | : | 6.20 | -2.17 | 2.9 | 2.5 | : | 7.10 | -1.27 | 5.6 | 4.2 | : | 12.08 | -.52 | 3.3 | 3.6 |
| DATE 02/03/77 | | | | | | | | | | | | | | | |
| TIME 11:00:00 | | | | | | | | | | | | | | | |
| DATE 02/03/77 | | | | | | | | | | | | | | | |
| TIME 12:00:00 | | | | | | | | | | | | | | | |
| WEATHER H | | | | | | | | | | | | | | | |
| WEATHER H | | | | | | | | | | | | | | | |
| CLD (TENTHS) | | | | | | | | | | | | | | | |
| LOW 10 MID HI | | | | | | | | | | | | | | | |
| TOTL 10:LOW 10 MID HI | | | | | | | | | | | | | | | |
| EXPONENTS | | | | | | | | | | | | | | | |
| LOW 305 MID HI | | | | | | | | | | | | | | | |
| LOW 1220 MID HI | | | | | | | | | | | | | | | |
| NET RADIATION | | | | | | | | | | | | | | | |
| A = -0.29 B = -0.38 P = .15 | | | | | | | | | | | | | | | |
| A = -0.13 B = -0.03 P = .14 | | | | | | | | | | | | | | | |
| RICHARDSON NO. | | | | | | | | | | | | | | | |
| 10.12 MW/CM2 | | | | | | | | | | | | | | | |
| 14.44 MW/CM2 | | | | | | | | | | | | | | | |
| (1/L)*10 | | | | | | | | | | | | | | | |
| (4M) -.08 (8M) -.20 (16M) -.36 : (4M) -.07 (8M) -.20 (16M) -.42 : (4M) -.02 (8M) -.05 (16M) -.12 | | | | | | | | | | | | | | | |
| (39.192M) 1.20 (OBSERVED DATA): (39.192M) 1.34 (OBSERVED DATA): (39.192M) .61 (OBSERVED DATA): | | | | | | | | | | | | | | | |
| (4M) -.23 (8M) -.29 (16M) -.25 : (4M) -.21 (8M) -.28 (16M) -.29 : (4M) -.06 (8M) -.08 (16M) -.08 | | | | | | | | | | | | | | | |
| (4M) .3408 (8M) .3422 (16M) .3440 : (4M) .3986 (8M) .3980 (16M) .4026 : (4M) .6324 (8M) .6376 (16M) .6366 : | | | | | | | | | | | | | | | |
| HEIGHT (M) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
| 4.0 | : | 1.88 | -.0474 | -.151 | -.04 | : | 1.631 | -.0523 | -.120 | -.04 | : | .2789 | -.0384 | -.031 | -.02 |
| 8.0 | : | .0826 | -.0386 | -.398 | -.20 | : | .0899 | -.0444 | -.335 | -.20 | : | .1539 | -.0334 | -.087 | -.05 |
| 16.0 | : | .0458 | -.0210 | -.702 | -.72 | : | .0496 | -.0286 | -.712 | -.84 | : | .0849 | -.0234 | -.201 | -.12 |
| 39.2* | : | .0256 | .0219 | 3.382 | .00 | : | .0169 | .0106 | 1.257 | .00 | : | .0219 | .0081 | .330 | .00 |

* OBSERVED DATA

OBSERVED DATA

```

: DATE 02/03/77 TIME 07:00:00 : DATE 02/03/77 TIME 08:00:00 : DATE 02/03/77 TIME 09:00:00 :
: WEATHER S- : WEATHER S- : WEATHER SW-
: TEMP DEG C -3.1 : TEMP DEG C -3.1 : TEMP DEG C -3.1
: DEW POINT DEG C -5.5 : DEW POINT DEG C -5.5 : DEW POINT DEG C -5.5
: VISIBILITY (MI) 0.75 : VISIBILITY (MI) 1.5 : VISIBILITY (MI) 5.0
: LOW 10 MID HI : LOW 10 MID HI : LOW 10 MID HI
: CLD (TENTHS) : CLD (TENTHS) : CLD (TENTHS)
: CLD HT (M) : CLD HT (M) : CLD HT (M)
: EXPONENTS : EXPONENTS : EXPONENTS
: NET RADIATION : NET RADIATION : NET RADIATION
: RICHARDSON NO.: RICHARDSON NO.: RICHARDSON NO.:
: (1/L)*10 : (1/L)*10 : (1/L)*10
: USTAR : USTAR : USTAR
: WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE
: ((DEG) (M/S) (C) (DEG) (DEG) : ((DEG) (M/S) (C) (DEG) (DEG) : ((DEG) (M/S) (C) (DEG) (DEG)
:
1. : -2.93 : -2.74 : -2.75
2. : 3.20. 3.62 -2.84 6.4 : 3.26. 3.90 -2.55 6.9 : 3.30. 2.87 -2.68 6.1
4. : 3.10. 4.38 -2.36 5.1 : 3.15. 4.71 -2.36 5.7 : 3.19. 3.45 -2.50 6.0
8. : 3.17. 4.97 -2.20 4.3 : 3.8. 322. 5.21 -2.54 4.9 : 4.1. 326. 3.80 -2.82 5.4
16. : 3.07. 5.53 -3.16 3.8 : 3.2. 312. 5.91 -2.88 4.8 : 3.2. 315. 4.44 -3.12 4.4
32. : 3.05. 6.87 -1.19 3.2 : 2.8. 309. 6.29 -2.60 3.7 : 3.2. 313. 4.98 -3.11 2.9
48. : 3.15. 8.23 : 2.6 2.2: 319. 7.71 : 3.1. 323. 6.66 : 2.4 1.3

```

```

: WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE
: ((DEG) (M/S) (C) (DEG) (DEG) : ((DEG) (M/S) (C) (DEG) (DEG) : ((DEG) (M/S) (C) (DEG) (DEG)
:
1. : -2.93 : -2.74 : -2.75
2. : 3.20. 3.62 -2.84 6.4 : 3.26. 3.90 -2.55 6.9 : 3.30. 2.87 -2.68 6.1
4. : 3.10. 4.38 -2.36 5.1 : 3.15. 4.71 -2.36 5.7 : 3.19. 3.45 -2.50 6.0
8. : 3.17. 4.97 -2.20 4.3 : 3.8. 322. 5.21 -2.54 4.9 : 4.1. 326. 3.80 -2.82 5.4
16. : 3.07. 5.53 -3.16 3.8 : 3.2. 312. 5.91 -2.88 4.8 : 3.2. 315. 4.44 -3.12 4.4
32. : 3.05. 6.87 -1.19 3.2 : 2.8. 309. 6.29 -2.60 3.7 : 3.2. 313. 4.98 -3.11 2.9
48. : 3.15. 8.23 : 2.6 2.2: 319. 7.71 : 3.1. 323. 6.66 : 2.4 1.3

```

LEAST SQUARES FITTED DATA

```

: WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE
: ((DEG) (M/S) (C) (DEG) (DEG) : ((DEG) (M/S) (C) (DEG) (DEG) : ((DEG) (M/S) (C) (DEG) (DEG)
:
1.0 : 3.04 -2.60 7.5 6.8 : 3.49 -2.53 7.7 5.2 : 2.40 -2.61 8.8 14.5
2.0 : 3.59 -2.65 6.3 5.6 : 3.98 -2.55 6.7 4.7 : 2.83 -2.65 7.2 9.8
4.0 : 4.25 -2.72 5.3 4.6 : 4.54 -2.59 5.9 4.3 : 3.33 -2.72 5.8 6.7
8.0 : 5.02 -2.79 4.4 3.8 : 5.19 -2.65 5.1 3.9 : 3.92 -2.85 4.7 4.5
16.0 : 5.93 -2.65 3.7 3.2 : 5.92 -2.72 4.5 3.5 : 4.62 -3.03 3.8 3.1
32.0 : 7.02 -1.28 3.1 2.6 : 6.76 -2.63 3.9 3.2 : 5.44 -3.13 3.1 2.1
48.0 : 7.74 1.56 2.7 2.3 : 7.30 -2.23 3.6 3.0 : 5.98 -2.87 2.7 1.7
: DU/DZ DTH/DZ RU*100 RI : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ RU*100 FI
:
4.0 : -2380 -0.130 -0.42 -0.1 : 2010 -0.071 -0.020 -0.1 : 1821 -0.0229 -0.120 -0.03
8.0 : -1407 -0.156 -0.144 -0.0 : 1147 -0.0011 -0.009 -0.0 : 1072 -0.0159 -0.239 -0.10
16.0 : -0832 -0.0729 1.920 -0.0 : 0655 -0.0110 -0.290 -0.0 : 0631 -0.0018 -0.077 -0.02
39.2* : -0850 -0.1820 17.918 -0.0 : 0883 -0.0332 3.840 -0.0 : 1050 -0.0253 4.280 -0.00

```

* OBSERVED DATA

| | | | | | | | | | | | | | | | | | | |
|----------------|-----------------|---------------|------------------|---------------|-----------------|------------------|-----------|----------|------------------|------------|----------|------------------|-----------|------------|------------------|-----------|-------|-------|
| | DATE 02/03/77 | TIME 10:00:00 | DATE 02/03/77 | TIME 11:00:00 | DATE 02/03/77 | TIME 12:00:00 | | | | | | | | | | | | |
| | WEATHER | H | WEATHER | H | WEATHER | H | | | | | | | | | | | | |
| | TEMP DEG C | -2.1 | TEMP DEG C | -1.3 | TEMP DEG C | -0.1 | | | | | | | | | | | | |
| | DEW POINT DEG C | -7.5 | DEW POINT DEG C | -4.4 | DEW POINT DEG C | -5.6 | | | | | | | | | | | | |
| | VISIBILITY (MI) | 5 | VISIBILITY (MI) | 5 | VISIBILITY (MI) | 5 | | | | | | | | | | | | |
| CLD (TENTHS) | LOW | 10 MID | HI | TOTAL | 10:LOW | 10 MID | HI | TOTAL | 10:LOW | 10 MID | HI | TOTAL | | | | | | |
| CLD HT (M) | LOW | 305 | MID | HI | LOW | 1220 | MID | HI | LOW | 1220 | MID | HI | | | | | | |
| EXPONENTS | A = | -0.29 | B = | -0.38 | P = | 0.15 | A = | -0.13 | B = | -0.03 | P = | 0.14 | | | | | | |
| NET RADIATION | | | | | | 10.12 MW/CM2 | | | | | | 18.07 MW/CM2 | | | | | | |
| RICHARDSON NO. | (4M) | -0.08 | (8M) | -0.20 | (16M) | -0.36 | (4M) | -0.07 | (8M) | -0.20 | (16M) | -0.42 | (4M) | -0.02 | (8M) | -0.05 | (16M) | -0.12 |
| | (39.192M) | 1.20 | (OBSERVED DATA): | (39.192M) | 1.34 | (OBSERVED DATA): | (39.192M) | 1.34 | (OBSERVED DATA): | (39.192M) | 1.61 | (OBSERVED DATA): | (39.192M) | 1.61 | (OBSERVED DATA): | (39.192M) | 1.61 | |
| (1/L)*10 | (4M) | -0.23 | (8M) | -0.29 | (16M) | -0.25 | (4M) | -0.21 | (8M) | -0.28 | (16M) | -0.29 | (4M) | -0.06 | (8M) | -0.08 | (16M) | -0.08 |
| USTAR | (4M) | 3.408 | (8M) | 3.422 | (16M) | 3.440 | (4M) | 3.386 | (8M) | 3.380 | (16M) | 4.026 | (4M) | 6.524 | (8M) | 6.376 | (16M) | 6.366 |
| HEIGHT (M) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | | | |
| 1. | | | -1.20 | | | | | 0.06 | | | | | 0.70 | | | | | |
| 2. | 354. | 3.82 | -1.13 | 6.8 | | 349. | 4.44 | 0.17 | 8.5 | | 351. | 7.53 | 0.75 | 6.9 | | | | |
| 4. | 344. | 4.29 | -1.17 | 5.8 | | 340. | 5.09 | 0.18 | 7.9 | | 341. | 8.59 | 0.76 | 5.8 | | | | |
| 8. | 352. | 4.75 | -1.54 | 4.9 | | 348. | 5.56 | -0.31 | 6.9 | | 349. | 9.52 | 0.64 | 4.9 | 4.4 | | | |
| 16. | 339. | 5.23 | -1.77 | 4.3 | | 335. | 6.14 | -0.55 | 6.3 | | 336. | 10.35 | 0.20 | 4.3 | 4.1 | | | |
| 32. | 339. | 5.81 | -2.33 | 3.4 | | 335. | 6.72 | -1.25 | 5.9 | | 336. | 11.50 | -0.44 | 3.8 | 3.6 | | | |
| 48. | 351. | 6.22 | -2.14 | 2.5 | | 347. | 6.99 | -1.24 | 5.9 | | 349. | 11.85 | -0.47 | 3.2 | 3.7 | | | |

| HEIGHT (M) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : |
|--------------|------------|------------|--------------|--------------|------------|------------|--------------|--------------|------------|------------|--------------|--------------|
| 1.0 : | 3.46 : | -1.09 : | 8.7 : | 10.5 : | 4.12 : | .21 : | 9.2 : | 4.6 : | 6.97 : | .84 : | 7.9 : | 5.5 : |
| 2.0 : | 3.84 : | -1.15 : | 7.1 : | 8.1 : | 4.54 : | .14 : | 8.5 : | 4.6 : | 7.69 : | .79 : | 6.8 : | 5.1 : |
| 4.0 : | 4.26 : | -1.27 : | 5.8 : | 6.3 : | 5.00 : | .01 : | 7.7 : | 4.5 : | 8.48 : | .68 : | 5.8 : | 4.7 : |
| 8.0 : | 4.73 : | -1.50 : | 4.8 : | 4.8 : | 5.52 : | -.23 : | 7.1 : | 4.4 : | 9.36 : | .50 : | 5.0 : | 4.4 : |
| 16.0 : | 5.25 : | -1.86 : | 3.9 : | 3.7 : | 6.08 : | -.64 : | 6.5 : | 4.3 : | 10.33 : | .16 : | 4.3 : | 4.1 : |
| 32.0 : | 5.83 : | -2.24 : | 3.2 : | 2.9 : | 6.71 : | -1.16 : | 5.9 : | 4.2 : | 11.40 : | -.31 : | 3.6 : | 3.8 : |
| 48.0 : | 6.20 : | -2.17 : | 2.9 : | 2.5 : | 7.10 : | -1.27 : | 5.6 : | 4.2 : | 12.08 : | -.52 : | 3.3 : | 3.6 : |
| ----- | | | | | | | | | | | | |
| HEIGHT (M) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : |
| 4.0 : | 1.488 : | -.0474 : | -.151 : | -.04 : | 1.631 : | -.0523 : | -.120 : | -.04 : | 2.789 : | -.0384 : | -.031 : | -.02 : |
| 8.0 : | 0.826 : | -.0386 : | -.398 : | -.20 : | 0.899 : | -.0444 : | -.335 : | -.20 : | 1.539 : | -.0334 : | -.087 : | -.05 : |
| 16.0 : | 0.458 : | -.0210 : | -.702 : | -.72 : | 0.496 : | -.0286 : | -.712 : | -.84 : | 0.849 : | -.0234 : | -.201 : | -.12 : |
| 39.2* : | 0.0256 : | 0.0219 : | 3.382 : | .00 : | 0.0169 : | 0.0106 : | 1.257 : | .00 : | 0.0219 : | 0.0081 : | 0.330 : | .00 : |

* CASERVED DATA

OBSERVED DATA

| : DATE 02/03/77 | | TIME 13:00:00 | : DATE 02/03/77 | | TIME 14:00:00 | : DATE 02/03/77 | | TIME 15:00:00 |
|-------------------|-----------------------------------|-----------------------------------|-----------------------------------|-------------------|-----------------------------|-------------------|-----------------------------|---------------|
| : WEATHER | | | : WEATHER | | | : WEATHER | | |
| : TEMP DEG C | | 1.1 | : TEMP DEG C | | 0.9 | : TEMP DEG C | | 2.3 |
| : DEW POINT DEG C | | -6.1 | : DEW POINT DEG C | | -1.3 | : DEW POINT DEG C | | -6.2 |
| : VISIBILITY (MI) | | 10 | : VISIBILITY (MI) | | 10 | : VISIBILITY (MI) | | 10 |
| CLD (TENTHS) | LOW 10 MID HI | TOTL | 10:LOW 7 MID 3 HI | TOTL | 10:LOW 6 MID 3 HI | 1 TOTL | 10: | |
| CLD HT (M) | LOW 1220 MID | HI | LOW 1220 MID | 2440 HI | LOW 1220 MID | 2440 HI | 6095 | |
| EXPONENTS | : A = -.12 B = -.07 P = .15 | | : A = -.19 B = -.15 P = .15 | | : A = -.13 B = -.05 P = .14 | | | |
| NET RADIATION | : 18.07 MW/CM2 | | : 16.33 MW/CM2 | | : 16.33 MW/CM2 | | | |
| RICHARDSON NO.: | (4M) -.01 (8M) -.03 (16M) -.08 | (4M) -.01 (8M) -.02 (16M) -.02 | (4M) -.00 (8M) -.01 (16M) -.05 | (OBSERVED DATA): | (39.192M) .90 | (OBSERVED DATA): | (39.192M) .02 | |
| (L/L)*10 | (4M) -.04 (8M) -.05 (16M) -.06 | (4M) -.03 (8M) -.03 (16M) -.02 | (4M) -.01 (8M) -.01 (16M) -.02 | (OBSERVED DATA): | (4M) .01 (8M) .01 (16M) .01 | (OBSERVED DATA): | (4M) .01 (8M) .01 (16M) .02 | |
| USTAR | (4M) .5774 (8M) .5646 (16M) .5654 | (4M) .5275 (8M) .5119 (16M) .5015 | (4M) .5562 (8M) .5312 (16M) .5132 | | | | | |
| : WD WS | | TEMP SIGA SIGE | : WD WS | TEMP SIGA SIGE | : WD WS | TEMP SIGA SIGE | | |
| HEIGHT (M) | : (DEG) (M/S) (C) | (DEG) (DEG) (DEG) | : (DEG) (M/S) (C) | (DEG) (DEG) (DEG) | : (DEG) (M/S) (C) | (DEG) (DEG) (DEG) | | |
| 1. | 1.29 | 1.35 | 7.0 | 1.89 | 1.95 | 6.7 | 359. | 2.32 |
| 2. | 348. | 6.68 | 1.35 | 347. | 6.13 | 1.95 | 359. | 2.36 |
| 4. | 339. | 7.62 | 1.35 | 337. | 7.01 | 1.96 | 350. | 2.37 |
| 8. | 347. | 8.46 | 1.24 | 345. | 7.78 | 1.82 | 357. | 2.26 |
| 16. | 334. | 9.37 | .90 | 333. | 8.46 | 1.72 | 344. | 2.31 |
| 32. | 334. | 10.39 | .51 | 333. | 9.43 | 1.41 | 342. | 2.14 |
| 48. | 346. | 10.73 | .33 | 346. | 9.82 | 1.49 | 355. | 2.00 |

LEAST SQUARES FITTED DATA

| : WS | | TEMP | SIGA | SIGE | : WS | | TEMP | SIGA | SIGE |
|------------|---------|--------|--------|-------|------------|---------|--------|--------|-------|
| HEIGHT (M) | : (M/S) | (C) | (DEG) | (DEG) | HEIGHT (M) | : (M/S) | (C) | (DEG) | (DEG) |
| 1.0 | 6.13 | 1.39 | 7.0 | 5.1 | 5.65 | 1.97 | 7.2 | 5.9 | 6.05 |
| 2.0 | 6.80 | 1.35 | 6.4 | 4.8 | 6.25 | 1.95 | 6.3 | 5.4 | 6.69 |
| 4.0 | 7.54 | 1.29 | 5.9 | 4.6 | 6.92 | 1.90 | 5.5 | 4.8 | 7.39 |
| 8.0 | 8.37 | 1.16 | 5.4 | 4.3 | 7.66 | 1.81 | 4.9 | 4.3 | 8.16 |
| 16.0 | 9.29 | .92 | 5.0 | 4.1 | 8.47 | 1.66 | 4.3 | 3.9 | 9.01 |
| 32.0 | 10.30 | .55 | 4.6 | 3.9 | 9.38 | 1.49 | 3.7 | 3.5 | 9.96 |
| 48.0 | 10.95 | .31 | 4.3 | 3.8 | 9.95 | 1.46 | 3.5 | 3.3 | 10.55 |
| : DU/DZ | | DTM/DZ | BU*100 | RI | : DU/DZ | | DTM/DZ | BU*100 | RI |
| 4.0 | .2616 | -.0228 | -.023 | -.01 | .2344 | -.0126 | -.015 | -.01 | .2454 |
| 8.0 | .1451 | -.0203 | -.066 | -.03 | .1297 | -.0096 | -.037 | -.02 | .1355 |
| 16.0 | .0805 | -.0152 | -.161 | -.08 | .0718 | -.0035 | -.045 | -.02 | .0749 |
| 39.2* | .0212 | -.0012 | -.062 | -.10 | .0244 | .0150 | .891 | .00 | .0306 |

* OBSERVED DATA

OBSERVED DATA

| DATE 02/03/77 TIME 16:00:00 : DATE 02/03/77 TIME 17:00:00 : DATE 02/03/77 TIME 18:00:00 : | | | | | | | | | |
|---|---|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | |
| TEMP DEG C | 3.0 | TEMP DEG C | 0.5 | TEMP DEG C | -0.9 | TEMP DEG C | -0.9 | TEMP DEG C | -0.9 |
| DEW POINT DEG C | -4.6 | DEW POINT DEG C | -4.3 | DEW POINT DEG C | -4.0 | DEW POINT DEG C | -4.0 | DEW POINT DEG C | -4.0 |
| VISIBILITY (MI) | 10 | VISIBILITY (MI) | 25 | VISIBILITY (MI) | 25 | VISIBILITY (MI) | 25 | VISIBILITY (MI) | 25 |
| CLD (TENTHS) | LOW 2 MID 4 HI 6 TOTL 10:LOW 2 MID 5 HI 3 TOTL 10:LOW 0 MID 6 HI 4 TOTL 10: | | | | | | | | |
| CLD HT (M) | LOW 1220 MID 2440 HI 6095 : LOW 1220 MID 3660 HI 6095 : LOW 1220 MID 3660 HI 7620 : | | | | | | | | |
| EXPONENTS | A = -.26 B = -.27 P = .18 | A = -.21 R = -.31 P = .18 | A = -.21 R = -.31 P = .18 | A = -.21 R = -.31 P = .18 | A = -.21 R = -.31 P = .18 | A = -.21 R = -.31 P = .18 | A = -.21 R = -.31 P = .18 | A = -.21 R = -.31 P = .18 | A = -.21 R = -.31 P = .18 |
| NET RADIATION | 8.70 MW/CM2 | 3.26 MW/CM2 | 3.26 MW/CM2 | 3.26 MW/CM2 | 3.26 MW/CM2 | 3.26 MW/CM2 | 3.26 MW/CM2 | 3.26 MW/CM2 | 3.26 MW/CM2 |
| RICHARDSON NO. | (4M) .01 (8M) .02 (16M) .03 : (4M) .01 (8M) .03 (16M) .07 : (4M) .02 (8M) .04 (16M) .09 : | | | | | | | | |
| (1/L)*10 | (39.192M) .00 (OBSERVED DATA) : (39.192M) .06 (OBSERVED DATA) : (39.192M) .10 (OBSERVED DATA) : | | | | | | | | |
| USTAR | (4M) .02 (8M) .03 (16M) .03 : (4M) .04 (8M) .07 (16M) .09 : (4M) .05 (8M) .09 (16M) .13 : | | | | | | | | |
| | (4M) .5498 (8M) .5296 (16M) .5217 : (4M) .4957 (8M) .4662 (16M) .4329 : (4M) .4472 (8M) .4236 (16M) .3872 : | | | | | | | | |
| HEIGHT (M) | WD (M/S) (C) (DEG) SIGA (DEG) SIGE (DEG) (DEG) WS (M/S) (C) (DEG) TEMP (C) (DEG) (DEG) : | | | | | | | | |
| 1. | WD : 350. | WS : 6.56 | SIGA : 2.36 | SIGE : 7.0 | TEMP : 1.84 | TEMP : 1.97 | TEMP : 1.38 | TEMP : 1.23 | SIGE : 1.23 |
| 2. | WD : 340. | WS : 7.59 | SIGA : 2.51 | SIGE : 5.8 | TEMP : 5.88 | TEMP : 6.91 | TEMP : 5.50 | TEMP : 5.50 | SIGE : 352. |
| 4. | WD : 348. | WS : 8.56 | SIGA : 2.45 | SIGE : 5.3 | TEMP : 7.65 | TEMP : 8.70 | TEMP : 6.36 | TEMP : 6.36 | SIGE : 343. |
| 8. | WD : 336. | WS : 9.66 | SIGA : 2.52 | SIGE : 3.9 | TEMP : 8.70 | TEMP : 9.94 | TEMP : 7.18 | TEMP : 7.18 | SIGE : 350. |
| 16. | WD : 335. | WS : 10.85 | SIGA : 2.42 | SIGE : 3.6 | TEMP : 9.94 | TEMP : 2.21 | TEMP : 8.07 | TEMP : 8.07 | SIGE : 4.0: 337. |
| 32. | WD : 348. | WS : 2.26 | SIGA : 2.26 | SIGE : 2.9 | TEMP : 2.11 | TEMP : 3.4 | TEMP : 1.68 | TEMP : 1.68 | SIGE : 3.3: 337. |
| 48. | WD : 348. | WS : 2.26 | SIGA : 2.26 | SIGE : 2.9 | TEMP : 2.11 | TEMP : 3.4 | TEMP : 1.60 | TEMP : 1.60 | SIGE : 2.6: 349. |

LEAST SQUARES FITTED DATA

| DATE 02/03/77 TIME 16:00:00 : DATE 02/03/77 TIME 17:00:00 : DATE 02/03/77 TIME 18:00:00 : | | | | | | | | | |
|---|---|-------------------|---------------|-------------------|---------------|-------------------|---------------|-------------------|---------------|
| WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | |
| TEMP (DEG C) | 3.0 | TEMP (DEG C) | 0.5 | TEMP (DEG C) | -0.9 | TEMP (DEG C) | -0.9 | TEMP (DEG C) | -0.9 |
| DEW POINT (DEG C) | -4.6 | DEW POINT (DEG C) | -4.3 | DEW POINT (DEG C) | -4.0 | DEW POINT (DEG C) | -4.0 | DEW POINT (DEG C) | -4.0 |
| VISIBILITY (MI) | 10 | VISIBILITY (MI) | 25 | VISIBILITY (MI) | 25 | VISIBILITY (MI) | 25 | VISIBILITY (MI) | 25 |
| CLD (TENTHS) | LOW 2 MID 4 HI 6 TOTL 10:LOW 2 MID 5 HI 3 TOTL 10:LOW 0 MID 6 HI 4 TOTL 10: | | | | | | | | |
| CLD HT (M) | LOW 1220 MID 2440 HI 6095 : LOW 1220 MID 3660 HI 6095 : LOW 1220 MID 3660 HI 7620 : | | | | | | | | |
| EXPONENTS | A = -.26 B = -.27 P = .18 A = -.21 R = -.31 P = .18 A = -.21 R = -.31 P = .18 A = -.21 R = -.31 P = .18 A = -.21 R = -.31 P = .18 A = -.21 R = -.31 P = .18 A = -.21 R = -.31 P = .18 A = -.21 R = -.31 P = .18 A = -.21 R = -.31 P = .18 A = -.21 R = -.31 P = .18 | | | | | | | | |
| NET RADIATION : | 8.70 MW/CM2 3.26 MW/CM2 3.26 MW/CM2 3.26 MW/CM2 3.26 MW/CM2 3.26 MW/CM2 3.26 MW/CM2 3.26 MW/CM2 3.26 MW/CM2 3.26 MW/CM2 | | | | | | | | |
| RICHARDSON NO. : | (4M) .01 (8M) .02 (16M) .03 : (4M) .01 (8M) .03 (16M) .07 : (4M) .02 (8M) .04 (16M) .09 : (4M) .01 (8M) .02 (16M) .03 : (4M) .01 (8M) .03 (16M) .07 : (4M) .02 (8M) .04 (16M) .09 : (4M) .01 (8M) .02 (16M) .03 : (4M) .01 (8M) .03 (16M) .07 : (4M) .02 (8M) .04 (16M) .09 : | | | | | | | | |
| (1/L)*10 | (39.192M) .00 (OBSERVED DATA) : (39.192M) .06 (OBSERVED DATA) : (39.192M) .10 (OBSERVED DATA) : (39.192M) .00 (OBSERVED DATA) : (39.192M) .06 (OBSERVED DATA) : (39.192M) .10 (OBSERVED DATA) : (39.192M) .00 (OBSERVED DATA) : (39.192M) .06 (OBSERVED DATA) : (39.192M) .10 (OBSERVED DATA) : | | | | | | | | |
| USTAR | (4M) .02 (8M) .03 (16M) .03 : (4M) .04 (8M) .07 (16M) .09 : (4M) .05 (8M) .09 (16M) .13 : (4M) .02 (8M) .03 (16M) .03 : (4M) .04 (8M) .07 (16M) .09 : (4M) .05 (8M) .09 (16M) .13 : (4M) .02 (8M) .03 (16M) .03 : (4M) .04 (8M) .07 (16M) .09 : (4M) .05 (8M) .09 (16M) .13 : | | | | | | | | |
| HEIGHT (M) : (DEG) (M/S) (C) (DEG) (DEG) (DEG) (M/S) (C) (DEG) (DEG) (DEG) : | | | | | | | | | |
| 1.0 | WD : 5.85 | WS : 2.42 | SIGA : 8.5 | SIGE : 7.9 | TEMP : 5.24 | TEMP : 1.93 | TEMP : 4.86 | TEMP : 1.34 | SIGE : 9.0 |
| 2.0 | WD : 6.63 | WS : 2.43 | SIGA : 7.1 | SIGE : 6.6 | TEMP : 5.95 | TEMP : 1.95 | TEMP : 5.53 | TEMP : 1.37 | SIGE : 7.3 |
| 4.0 | WD : 7.51 | WS : 2.45 | SIGA : 5.9 | SIGE : 5.5 | TEMP : 6.77 | TEMP : 2.00 | TEMP : 6.30 | TEMP : 1.42 | SIGE : 5.9 |
| 8.0 | WD : 8.51 | WS : 2.47 | SIGA : 4.9 | SIGE : 4.6 | TEMP : 7.69 | TEMP : 2.08 | TEMP : 7.17 | TEMP : 1.51 | SIGE : 4.8 |
| 16.0 | WD : 9.64 | WS : 2.50 | SIGA : 4.1 | SIGE : 3.8 | TEMP : 8.74 | TEMP : 2.20 | TEMP : 8.15 | TEMP : 1.65 | SIGE : 3.9 |
| 32.0 | WD : 10.92 | WS : 2.45 | SIGA : 3.4 | SIGE : 3.2 | TEMP : 9.93 | TEMP : 2.26 | TEMP : 9.28 | TEMP : 1.74 | SIGE : 3.1 |
| 48.0 | WD : 11.75 | WS : 2.25 | SIGA : 3.1 | SIGE : 2.8 | TEMP : 10.71 | TEMP : 2.09 | TEMP : 10.01 | TEMP : 1.58 | SIGE : 2.8 |
| DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : | | | | | | | | | |
| 4.0 | DU/DZ : .3132 | DTH/DZ : .0170 | BU*100 : .017 | RI : .00 | DU/DZ : .2895 | DTH/DZ : .0307 | BU*100 : .038 | RI : .00 | DU/DZ : .2721 |
| 8.0 | DU/DZ : .1774 | DTH/DZ : .0143 | BU*100 : .045 | RI : .00 | DU/DZ : .1645 | DTH/DZ : .0263 | BU*100 : .101 | RI : .00 | DU/DZ : .1548 |
| 16.0 | DU/DZ : .1005 | DTH/DZ : .0088 | BU*100 : .086 | RI : .00 | DU/DZ : .0935 | DTH/DZ : .0174 | BU*100 : .208 | RI : .00 | DU/DZ : .0891 |
| 39.2* | DU/DZ : .0563 | DTH/DZ : .0000 | BU*100 : .000 | RI : .00 | DU/DZ : .0479 | DTH/DZ : .0038 | BU*100 : .194 | RI : .00 | DU/DZ : .0431 |

* OBSERVED DATA

OBSERVED DATA

| | DATE 02/03/77 | TIME 19:00:00 | DATE 02/03/77 | TIME 20:00:00 | DATE 02/03/77 | TIME 21:00:00 |
|-----------------|--|--|--|--|--|--|
| WEATHER | WEATHER | WEATHER | WEATHER | WEATHER | WEATHER | WEATHER |
| TEMP DEG C | 0.1 | TEMP DEG C | -2.3 | TEMP DEG C | -2.9 | TEMP DEG C |
| DEW POINT DEG C | -4.3 | DEW POINT DEG C | -4.8 | DEW POINT DEG C | -5.4 | DEW POINT DEG C |
| VISIBILITY (MI) | 15 | VISIBILITY (MI) | 15 | VISIBILITY (MI) | 15 | VISIBILITY (MI) |
| CLD (TENTHS) | LOW 0 MID 6 HI 2 TOTL 8 | LOW 0 MID 2 HI 8 TOTL 10 | LOW 0 MID 2 HI 8 TOTL 10 | LOW 0 MID 2 HI 8 TOTL 10 | LOW 0 MID 2 HI 8 TOTL 10 | LOW 0 MID 2 HI 8 TOTL 10 |
| CLD HT (M) | MID 3660 HI 7620 | MID 3660 HI 7620 | MID 3660 HI 7620 | MID 3660 HI 7620 | MID 3660 HI 7620 | MID 3660 HI 7620 |
| EXPONENTS | A = -.25 B = -.36 P = .22 | A = -.24 B = -.64 P = .22 | A = -.24 B = -.64 P = .22 | A = -.17 R = -.36 P = .28 | A = -.17 R = -.36 P = .28 | A = -.17 R = -.36 P = .28 |
| NET RADIATION | -2.90 MW/CM2 | -7.25 MW/CM2 | -7.25 MW/CM2 | -7.98 MW/CM2 | -7.98 MW/CM2 | -7.98 MW/CM2 |
| RICHARDSN NO. | (4M) .02 (8M) .05(16M) .11 | (4M) .05 (8M) .12(16M) .25 | (4M) .05 (8M) .12(16M) .25 | (4M) .05 (8M) .12(16M) .22 | (4M) .05 (8M) .12(16M) .22 | (4M) .05 (8M) .12(16M) .22 |
| (1/L)*10 | (39.192M) .27 (OBSERVED DATA) | (39.192M) .17 (OBSERVED DATA) | (39.192M) .17 (OBSERVED DATA) | (39.192M) .16 (OBSERVED DATA) | (39.192M) .16 (OBSERVED DATA) | (39.192M) .16 (OBSERVED DATA) |
| USTAR | (4M) .07 (8M) .12 (16M) .19 | (4M) .20 (8M) .42 (16M) .72 | (4M) .20 (8M) .42 (16M) .72 | (4M) .21 (8M) .39 (16M) .59 | (4M) .21 (8M) .39 (16M) .59 | (4M) .21 (8M) .39 (16M) .59 |
| | (4M).3599 (8M).3394 (16M).3132 | (4M).2686 (8M).2358 (16M).1996 | (4M).2686 (8M).2358 (16M).1996 | (4M).2166 (8M).1980 (16M).1833 | (4M).2166 (8M).1980 (16M).1833 | (4M).2166 (8M).1980 (16M).1833 |
| HEIGHT (M) | WD (DEG) WS (M/S) TEMP (C) SIGA (DEG) SIGE (DEG) | WD (DEG) WS (M/S) TEMP (C) SIGA (DEG) SIGE (DEG) | WD (DEG) WS (M/S) TEMP (C) SIGA (DEG) SIGE (DEG) | WD (DEG) WS (M/S) TEMP (C) SIGA (DEG) SIGE (DEG) | WD (DEG) WS (M/S) TEMP (C) SIGA (DEG) SIGE (DEG) | WD (DEG) WS (M/S) TEMP (C) SIGA (DEG) SIGE (DEG) |
| 1. | 348. 4.39 .60 .73 6.6 | 332. 3.50 -.63 6.6 | 332. 3.50 -.63 6.6 | 332. 3.50 -.63 6.6 | 332. 3.50 -.63 6.6 | 332. 3.50 -.63 6.6 |
| 2. | 338. 5.09 .86 5.8 | 321. 4.31 -.45 5.5 | 321. 4.31 -.45 5.5 | 321. 4.31 -.45 5.5 | 321. 4.31 -.45 5.5 | 321. 4.31 -.45 5.5 |
| 4. | 346. 5.81 .92 4.7 | 328. 4.61 -.33 5.0 | 328. 4.61 -.33 5.0 | 328. 4.61 -.33 5.0 | 328. 4.61 -.33 5.0 | 328. 4.61 -.33 5.0 |
| 8. | 334. 6.76 1.08 3.7 | 318. 5.66 -.14 5.0 | 318. 5.66 -.14 5.0 | 318. 5.66 -.14 5.0 | 318. 5.66 -.14 5.0 | 318. 5.66 -.14 5.0 |
| 16. | 333. 8.11 1.16 3.4 | 314. 6.45 .06 4.2 | 314. 6.45 .06 4.2 | 314. 6.45 .06 4.2 | 314. 6.45 .06 4.2 | 314. 6.45 .06 4.2 |
| 32. | 346. 1.17 3.0 | 327. 2.3 3.0 | 327. 2.3 3.0 | 327. 2.3 3.0 | 327. 2.3 3.0 | 327. 2.3 3.0 |
| 48. | 346. 1.17 3.0 | 327. 2.3 3.0 | 327. 2.3 3.0 | 327. 2.3 3.0 | 327. 2.3 3.0 | 327. 2.3 3.0 |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|
| 1.0 | 3.75 | 3.75 | .70 | 7.9 | 9.7 | 3.06 | 3.06 | -.53 | 7.9 | 17.1 | 2.27 | 2.27 | -1.31 | 6.9 | 7.2 |
| 2.0 | 4.36 | 4.36 | .73 | 6.6 | 7.6 | 3.56 | 3.56 | -.48 | 6.7 | 11.0 | 2.75 | 2.75 | -1.26 | 6.1 | 5.6 |
| 4.0 | 5.07 | 5.07 | .78 | 5.6 | 5.9 | 4.13 | 4.13 | -.38 | 5.7 | 7.0 | 3.33 | 3.33 | -1.15 | 5.4 | 4.4 |
| 8.0 | 5.89 | 5.89 | .89 | 4.7 | 4.6 | 4.80 | 4.80 | -.20 | 4.8 | 4.5 | 4.03 | 4.03 | -.94 | 4.9 | 3.4 |
| 16.0 | 6.86 | 6.86 | 1.06 | 3.9 | 3.6 | 5.57 | 5.57 | .08 | 4.1 | 2.9 | 4.88 | 4.88 | -.62 | 4.3 | 2.6 |
| 32.0 | 7.98 | 7.98 | 1.22 | 3.3 | 2.8 | 6.47 | 6.47 | .36 | 3.5 | 1.9 | 5.91 | 5.91 | -.29 | 3.9 | 2.0 |
| 48.0 | 8.71 | 8.71 | 1.15 | 3.0 | 2.5 | 7.06 | 7.06 | .25 | 3.1 | 1.4 | 6.61 | 6.61 | -.37 | 3.6 | 1.8 |
| | DU/DZ | OTH/DZ | BU*100 | RI | DU/DZ | OTH/DZ | BU*100 | RI | DU/DZ | OTH/DZ | BU*100 | RI | DU/DZ | OTH/DZ | BU*100 |
| 4.0 | .2563 | .0373 | .083 | .00 | .2066 | .0555 | .187 | .00 | .2138 | .0619 | .322 | .00 | .2138 | .0619 | .322 |
| 8.0 | .1490 | .0328 | .216 | .00 | .1200 | .0481 | .480 | .00 | .1295 | .0538 | .763 | .00 | .1295 | .0538 | .763 |
| 16.0 | .0867 | .0237 | .461 | .00 | .0697 | .0333 | .995 | .00 | .0784 | .0374 | 1.445 | .00 | .0784 | .0374 | 1.445 |
| 39.2* | .0376 | .0106 | .830 | .00 | .0381 | .0069 | .837 | .00 | .0452 | .0094 | 1.339 | .00 | .0452 | .0094 | 1.339 |

* OBSERVED DATA

OBSERVED DATA

| | : DATE 02/03/77 | TIME 22:00:00 | : DATE 02/03/77 | TIME 23:00:00 | : DATE 03/03/77 | TIME 00:00:00 | | | | | | | | | | | | | | |
|----------------|-------------------|---------------|-------------------|---------------|-------------------|-----------------|-------------|--------|-----------------|-------------|-------|-----------------|-------------|--------|-----------------|-------------|---------|-----------------|------|-------|
| | : WEATHER | | : WEATHER | | : WEATHER | | | | | | | | | | | | | | | |
| | : TEMP DEG C | -3.7 | : TEMP DEG C | -4.9 | : TEMP DEG C | -5.8 | | | | | | | | | | | | | | |
| | : DEW POINT DEG C | -5.6 | : DEW POINT DEG C | -6.5 | : DEW POINT DEG C | -9.1 | | | | | | | | | | | | | | |
| | : VISIBILITY (MI) | 15 | : VISIBILITY (MI) | 20 | : VISIBILITY (MI) | 20 | | | | | | | | | | | | | | |
| CLD (TENTHS) | : LOW | 0 | MID | 0 | HI | 4 | TOTL | 4 | : LOW | 0 | MID | 0 | HI | 5 | TOTL | 5 | | | | |
| CLD HT (M) | : LOW | | MID | | HI | 6095 | : LOW | | MID | | HI | 6095 | : LOW | | HI | 6095 | | | | |
| EXPONENTS | : A = | -.11 | B = | .05 | P = | .31 | : A = | -.60 | B = | -.21 | P = | .42 | : A = | .17 | B = | .69 | P = | .25 | | |
| NET RADIATION | : -7.98 | MW/CM2 | | | | | : -7.98 | MW/CM2 | | | | | : -7.98 | MW/CM2 | | | | | | |
| RICHARDSON NO. | : (4M) | .06 | (8M) | .13 | (16M) | .25 | : (4M) | .18 | (8M) | .34 | (16M) | .47 | : (4M) | .82 | (8M) | 1.96 | (16M) | 3.39 | | |
| | : (39.192M) | .38 | (OBSERVED DATA) | : (39.192M) | .06 | (OBSERVED DATA) | : (39.192M) | .15 | (OBSERVED DATA) | : (39.192M) | .15 | (OBSERVED DATA) | : (39.192M) | .15 | (OBSERVED DATA) | : (39.192M) | .15 | (OBSERVED DATA) | | |
| (L/L)*10 | : (4M) | .28 | (8M) | .50 | (16M) | .72 | : (4M) | 1.65 | (8M) | 2.56 | (16M) | 2.36 | : (4M) | 27.44 | (8M) | 74.21 | (16M) | ***** | | |
| USTAR | : (4M) | .1930 | (8M) | .1819 | (16M) | .1677 | : (4M) | .0883 | (8M) | .0829 | (16M) | .0884 | : (4M) | .0366 | (8M) | .0212 | (16M) | .0153 | | |
| | : WS | TEMP | SIGA | SIGE | : WS | TEMP | SIGA | SIGE | : WS | TEMP | SIGA | SIGE | : WS | TEMP | SIGA | SIGE | : WS | TEMP | SIGA | SIGE |
| | : (DEG) | (M/S) | (C) | (DEG) | : (DEG) | (M/S) | (C) | (DEG) | : (DEG) | (M/S) | (C) | (DEG) | : (DEG) | (M/S) | (C) | (DEG) | : (DEG) | (M/S) | (C) | (DEG) |
| HEIGHT (M) | : WS | TEMP | SIGA | SIGE | : WS | TEMP | SIGA | SIGE | : WS | TEMP | SIGA | SIGE | : WS | TEMP | SIGA | SIGE | : WS | TEMP | SIGA | SIGE |
| | : (DEG) | (M/S) | (C) | (DEG) | : (DEG) | (M/S) | (C) | (DEG) | : (DEG) | (M/S) | (C) | (DEG) | : (DEG) | (M/S) | (C) | (DEG) | : (DEG) | (M/S) | (C) | (DEG) |
| 1. | | | -2.45 | | | | -4.07 | | | | | | | | | | | | | |
| 2. | 345. | 2.49 | -2.21 | 10.1 | | 308. | 1.32 | -3.72 | 20.1 | | 270. | 1.28 | -5.39 | 10.5 | | | | | | |
| 4. | 337. | 3.09 | -1.94 | 9.5 | | 300. | 1.90 | -3.17 | 21.2 | | 266. | 1.82 | -4.76 | 7.6 | | | | | | |
| 8. | 348. | 3.69 | -1.71 | 7.6 | | 312. | 2.55 | -2.55 | 22.8 | | 3.1 | 279. | 2.56 | -3.81 | 8.6 | | | | | |
| 16. | 340. | 4.57 | -1.35 | 5.2 | | 313. | 3.51 | -1.64 | 17.9 | | 3.0 | 285. | 2.83 | -2.19 | 12.9 | | | | | |
| 32. | 1. | 5.95 | -.99 | 30.3 | | 324. | 4.13 | -1.24 | 5.4 | | 2.1 | 302. | 2.40 | -1.91 | 15.4 | | | | | |
| 48. | 1. | | -.90 | 2.8 | | 341. | | -1.27 | 2.8 | | 2.3 | 328. | | -1.88 | 14.0 | | | | | |

A-60

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1.0 | 1.99 | -2.28 | 10.7 | 3.4 | 1.04 | -3.82 | 49.0 | 4.9 | 1.26 | -5.52 | 7.4 | .5 |
| 2.0 | 2.47 | -2.21 | 9.9 | 3.6 | 1.39 | -3.65 | 32.4 | 4.3 | 1.49 | -5.27 | 8.3 | .8 |
| 4.0 | 3.05 | -2.06 | 9.2 | 3.7 | 1.85 | -3.33 | 21.4 | 3.7 | 1.77 | -4.81 | 9.4 | 1.3 |
| 8.0 | 3.78 | -1.80 | 8.6 | 3.8 | 2.47 | -2.74 | 14.1 | 3.2 | 2.10 | -3.96 | 10.6 | 2.1 |
| 16.0 | 4.68 | -1.37 | 7.9 | 3.9 | 3.30 | -1.81 | 9.3 | 2.7 | 2.48 | -2.63 | 11.9 | 3.3 |
| 32.0 | 5.79 | -.89 | 7.4 | 4.1 | 4.41 | -.94 | 6.1 | 2.4 | 2.94 | -1.39 | 13.5 | 5.4 |
| 48.0 | 6.56 | -.94 | 7.1 | 4.2 | 5.23 | -1.38 | 4.8 | 2.2 | 3.25 | -2.06 | 14.4 | 7.1 |
| | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | RU*100 | PI |
| 4.0 | .2188 | .0783 | .485 | .00 | .1813 | .1622 | 2.747 | .00 | .1006 | .2283 | 4.261 | .00 |
| 8.0 | .1354 | .0681 | 1.102 | .00 | .1211 | .1365 | 5.170 | .00 | .0596 | .1912 | 10.132 | .00 |
| 16.0 | .0838 | .0478 | 2.014 | .00 | .0809 | .0851 | 7.200 | .00 | .0353 | .1170 | 17.575 | .00 |
| 39.2* | .0383 | .0156 | 2.229 | .00 | .0687 | .0081 | 2.104 | .00 | .0533 | .0119 | 8.507 | .00 |

* OBSERVED DATA

* OBSERVED DATA

OBSERVED DATA

| | | DATE 03/03/77 | | TIME 01:00:00 | | DATE 03/03/77 | | TIME 02:00:00 | | DATE 03/03/77 | | TIME 03:00:00 | | | | | | |
|----------------|-----------|-----------------|------------------|-----------------|-------|------------------|--------------|-----------------|------------------|-----------------|--------------|------------------|-----------|-------|------------------|-----------|-------|------------------|
| | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | | | | | |
| | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | | | | | |
| | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | | | | | |
| | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | | | | | |
| CLD (TENTHS) | LOW | 1 | MID | HI | TOTL | 1:LOW | 2 | MID | HI | TOTL | 2:LOW | 1 | MID | 2 | HI | TOTL | 3: | |
| CLD HT (M) | LOW | MID | 3660 | HI | | LOW | MID | 3660 | HI | | LOW | MID | 3660 | HI | 7620 | | | |
| EXPONENTS | A= | .11 | B= | .31 | P= | .40 | A= | -.14 | B= | .83 | P= | .22 | A= | .22 | B= | .43 | P= | .08 |
| NET RADIATION | | | -7.98 MW/CM2 | | | | -7.25 MW/CM2 | | | | -6.52 MW/CM2 | | | | | | | |
| RICHARDSON NO. | (4M) | .45 | (8M) | .84 | (16M) | 1.08 | (4M) | .17 | (8M) | 3.59 | (16M) | 6.17 | (4M) | 1.03 | (8M) | 34.42 | (16M) | 66.87 |
| | (39.192M) | .05 | (OBSERVED DATA): | (39.192M) | .05 | (OBSERVED DATA): | (39.192M) | .05 | (OBSERVED DATA): | (39.192M) | .05 | (OBSERVED DATA): | (39.192M) | .05 | (OBSERVED DATA): | (39.192M) | .05 | (OBSERVED DATA): |
| (1/L)*10 | (4M) | 8.58 | (8M) | 14.18 | (16M) | 11.70 | (4M) | 1.51 | (8M) | 11.70 | (16M) | 11.70 | (4M) | 42.4 | (8M) | 11.70 | (16M) | 11.70 |
| USTAR | (4M) | .0483 | (8M) | .0406 | (16M) | .0433 | (4M) | .0908 | (8M) | .0120 | (16M) | .0084 | (4M) | .034 | (8M) | .0000 | (16M) | .0000 |
| | | WD | | WS | | WD | | WS | | WD | | WS | | WD | | WS | | |
| HEIGHT (M) | (DEG) | (M/S) | (C) | TEMP | SIGA | (DEG) | (DEG) | (M/S) | (C) | TEMP | SIGA | (DEG) | (DEG) | (M/S) | (C) | TEMP | SIGA | (DEG) |
| 1. | | 307. | .99 | -5.95 | 6.1 | | | 258. | 1.13 | -7.24 | 10.5 | | | 287. | 1.15 | -6.26 | 5.5 | |
| 2. | | 293. | 1.81 | -4.90 | 5.0 | | | 260. | 1.85 | -6.14 | 6.3 | | | 274. | 1.97 | -3.82 | 1.6 | |
| 4. | | 299. | 2.33 | -3.03 | 4.3 | | | 272. | 3.06 | -4.48 | 4.2 | | | 286. | 2.01 | -2.82 | 2.6 | |
| 8. | | 296. | 2.97 | -2.24 | 6.0 | | | 272. | 2.77 | -2.55 | 5.0 | | | 285. | 1.61 | -2.42 | 5.0 | 1.0: |
| 16. | | 305. | 3.12 | -2.10 | 6.5 | | | 290. | 2.00 | -2.19 | 5.5 | | | 298. | 1.69 | -2.28 | 4.9 | 1.3: |
| 32. | | | | | | | | 312. | -2.26 | 6.2 | 2.9 | | | 323. | -2.33 | 6.9 | 2.3 | |
| 48. | | | | | | | | | | | | | | | | | | |

LEAST SQUARES FITTED DATA

| | | DATE 03/03/77 | | TIME 01:00:00 | | DATE 03/03/77 | | TIME 02:00:00 | | DATE 03/03/77 | | TIME 03:00:00 | | | | | | | | |
|----------------|-------|----------------------|--------------|-----------------------|------------------|-----------------------|--------------|-----------------------|-----------|-----------------------|------------------|-----------------------|-------|------------------|-----------|--------|------------------|--------|-------|-------|
| | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | | | | | | | |
| | | TEMP DEG C -7.1 | | TEMP DEG C -8.0 | | TEMP DEG C -8.0 | | TEMP DEG C -8.0 | | TEMP DEG C -9.6 | | TEMP DEG C -9.6 | | | | | | | | |
| | | DEW POINT DEG C -9.7 | | DEW POINT DEG C -10.4 | | DEW POINT DEG C -10.4 | | DEW POINT DEG C -10.4 | | DEW POINT DEG C -12.3 | | DEW POINT DEG C -12.3 | | | | | | | | |
| | | VISIBILITY (MI) 20 | | VISIBILITY (MI) 25 | | VISIBILITY (MI) 25 | | VISIBILITY (MI) 25 | | VISIBILITY (MI) 25 | | VISIBILITY (MI) 25 | | | | | | | | |
| CLD (TENTHS) | LOW | 1 | MID | HI | TOTL | 1:LOW | 2 | MID | HI | TOTL | 2:LOW | 1 | MID | 2 | HI | TOTL | 3: | | | |
| CLD HT (M) | LOW | MID | 3660 | HI | | LOW | MID | 3660 | HI | | LOW | MID | 3660 | HI | 7620 | | | | | |
| EXPONENTS | A= | .11 | B= | .31 | P= | .40 | A= | -.14 | B= | .83 | P= | .22 | A= | .22 | B= | .43 | P= | .08 | | |
| NET RADIATION | | | -7.98 MW/CM2 | | | | -7.25 MW/CM2 | | | | -6.52 MW/CM2 | | | | | | | | | |
| RICHARDSON NO. | (4M) | .45 | (8M) | .84 | (16M) | 1.08 | (4M) | .17 | (8M) | 3.59 | (16M) | 6.17 | (4M) | 1.03 | (8M) | 34.42 | (16M) | 66.87 | | |
| | | (39.192M) | | .05 | (OBSERVED DATA): | (39.192M) | .05 | (OBSERVED DATA): | (39.192M) | .05 | (OBSERVED DATA): | (39.192M) | .05 | (OBSERVED DATA): | (39.192M) | .05 | (OBSERVED DATA): | | | |
| (1/L)*10 | (4M) | 8.58 | (8M) | 14.18 | (16M) | 11.70 | (4M) | 1.51 | (8M) | 11.70 | (16M) | 11.70 | (4M) | 42.4 | (8M) | 11.70 | (16M) | 11.70 | | |
| USTAR | (4M) | .0483 | (8M) | .0406 | (16M) | .0433 | (4M) | .0908 | (8M) | .0120 | (16M) | .0084 | (4M) | .034 | (8M) | .0000 | (16M) | .0000 | | |
| | | WD | | WS | | WD | | WS | | WD | | WS | | WD | | WS | | | | |
| HEIGHT (M) | (DEG) | (M/S) | (C) | TEMP | SIGA | (DEG) | (DEG) | (M/S) | (C) | TEMP | SIGA | (DEG) | (DEG) | (M/S) | (C) | TEMP | SIGA | (DEG) | (DEG) | (DEG) |
| 1.0 | | .90 | -5.88 | 4.6 | 1.1 | | | 1.28 | -7.29 | 8.3 | .1 | | | 1.40 | -6.02 | 2.4 | .3 | | | |
| 2.0 | | 1.19 | -5.58 | 4.9 | 1.3 | | | 1.50 | -6.93 | 7.6 | .2 | | | 1.48 | -5.71 | 2.7 | .5 | | | |
| 4.0 | | 1.57 | -5.03 | 5.3 | 1.7 | | | 1.75 | -6.25 | 6.9 | .4 | | | 1.56 | -5.12 | 3.2 | .6 | | | |
| 8.0 | | 2.08 | -4.04 | 5.7 | 2.1 | | | 2.04 | -5.01 | 6.3 | .6 | | | 1.65 | -4.06 | 3.7 | .8 | | | |
| 16.0 | | 2.75 | -2.51 | 6.1 | 2.6 | | | 2.38 | -3.08 | 5.7 | 1.1 | | | 1.75 | -2.45 | 4.3 | 1.1 | | | |
| 32.0 | | 3.63 | -1.27 | 6.6 | 3.2 | | | 2.78 | -1.38 | 5.2 | 2.0 | | | 1.85 | -1.25 | 5.0 | 1.5 | | | |
| 48.0 | | 4.27 | -2.46 | 6.9 | 3.6 | | | 3.04 | -2.55 | 4.9 | 2.8 | | | 1.92 | -2.74 | 5.4 | 1.8 | | | |
| | | DU/DZ | | DTH/DZ | | DU/DZ | | DTH/DZ | | DU/DZ | | DTH/DZ | | DU/DZ | | DTH/DZ | | DU*100 | | RI |
| 4.0 | | .1481 | .2677 | 6.339 | .00 | | | .0905 | .3298 | 6.334 | .00 | | | .0296 | .2847 | 6.818 | .00 | | | |
| 8.0 | | .0979 | .2203 | 11.894 | .00 | | | .0528 | .2737 | 15.361 | .00 | | | .0157 | .2322 | 19.772 | .00 | | | |
| 16.0 | | .0647 | .1254 | 15.408 | .00 | | | .0308 | .1614 | 26.413 | .00 | | | .0083 | .1271 | 38.412 | .00 | | | |
| 39.2* | | .0721 | .0069 | 2.884 | .00 | | | .0652 | .0056 | 5.126 | .00 | | | .0141 | .0069 | 11.903 | .00 | | | |

* OBSERVED DATA

| | DATE | 03/03/77 | TIME | 04:00:00 | DATE | 03/03/77 | TIME | 05:00:00 | DATE | 03/03/77 | TIME | 06:00:00 |
|-----------------|-----------|----------|-----------------|-----------|-------|-----------------|-----------|----------|-----------------|-----------|-------|-----------------|
| CLD (TENTHS) | LOW | MID | HI | 4 TOTAL | LOW | MID | HI | 5 TOTAL | LOW | MID | HI | 4 TOTAL |
| CLD FT (M) | LOW | MID | HI | 7620 | LOW | MID | HI | 7620 | LOW | MID | HI | 7620 |
| EXPONENTS | A = | .07 | B = | -.08 | P = | -.18 | A = | .13 | B = | .87 | P = | .20 |
| NET RADIATION | | | | | | | | | | | | |
| RICHARDS CN NO. | (4M) | 7.09 | (8M) | 33.55 | (16M) | ***** | (4M) | .29* | (8M) | .47* | (16M) | 9.46 |
| | (39.192M) | 22.10 | (OBSERVED DATA) | (39.192M) | .89 | (OBSERVED DATA) | (39.192M) | 4.03 | (OBSERVED DATA) | (39.192M) | 4.03 | (OBSERVED DATA) |
| (1/L)*10 | (4M) | ***** | (8M) | ***** | (16M) | ***** | (4M) | 3.9* | (8M) | 4.7* | (16M) | ***** |
| USTAR | (4M) | .0021 | (8M) | .0000 | (16M) | .0000 | (4M) | .060* | (8M) | .052 | (16M) | .0050 |
| | (4M) | .0021 | (8M) | .0000 | (16M) | .0000 | (4M) | .1109 | (8M) | .0754 | (16M) | .0345 |

| HEIGHT (M) | : WD :(DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | : WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------------|-------------|-------------|---------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1. | : | | 8.32 | | | : | | -9.73 | | |
| 2. | : 65. | .61 | -8.27 | 11.2 | | : 105. | 1.32 | -9.73 | 11.5 | |
| 4. | : 56. | .66 | -8.14 | 8.8 | | : 98. | 1.54 | -9.56 | 10.7 | |
| 8. | : 81. | .64 | -7.94 | 18.4 | | 4.1: 111. | 1.84 | -9.44 | 8.5 | |
| 16. | : 72. | .96 | -6.49 | 14.5 | | 6.6: 111. | 2.97 | -7.53 | 5.9 | |
| 32. | : 332. | .27 | -4.93 | 37.2 | | 9.6: 110. | 1.88 | -5.07 | 18.3 | |
| 48. | : 296. | | -4.23 | 5.9 | | 2.6: 81. | | -4.41 | 16.4 | |
| | : | | | | | : | | | | |
| | : | | | | | : | | -11.27 | | |
| | : | | | | | : | 1.65 | -11.26 | 12.4 | |
| | : | | | | | : | 1.95 | -11.13 | 10.5 | |
| | : | | | | | : | 2.35 | -11.06 | 8.4 | 3.2: |
| | : | | | | | : | 3.26 | -10.85 | 6.9 | 3.0: |
| | : | | | | | : | 3.52 | -8.18 | 9.1 | 3.3: |
| | : | | | | | : | | -5.83 | 8.7 | 2.1: |
| | : | | | | | : | | | | |

| HEIGHT (M) : | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|--------------|-------------|---------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1.0 : | .85 | -8.51 | 11.3 | 6.6 : | 1.22 | -10.08 | 8.2 | .5 : | 1.33 | -11.33 | 11.9 | 4.7 : |
| 2.0 : | .75 | -8.37 | 11.9 | 6.2 : | 1.40 | -9.88 | 9.0 | .9 : | 1.63 | -11.29 | 11.0 | 4.2 : |
| 4.0 : | .66 | -8.08 | 12.5 | 5.9 : | 1.60 | -9.51 | 9.8 | 1.6 : | 1.99 | -11.22 | 10.2 | 3.8 : |
| 8.0 : | .58 | -7.54 | 13.1 | 5.6 : | 1.84 | -8.78 | 10.7 | 3.0 : | 2.44 | -11.02 | 9.5 | 3.4 : |
| 16.0 : | .51 | -6.58 | 13.8 | 5.2 : | 2.10 | -7.49 | 11.6 | 5.5 : | 2.99 | -10.45 | 8.8 | 3.0 : |
| 32.0 : | .45 | -5.08 | 14.5 | 5.0 : | 2.41 | -5.48 | 12.7 | 10.0 : | 3.66 | -8.56 | 8.1 | 2.7 : |
| 48.0 : | .42 | -4.17 | 14.9 | 4.8 : | 2.61 | -4.25 | 13.4 | 14.2 : | 4.13 | -5.70 | 7.8 | 2.5 : |
| ----- | | | | | | | | | | | | |
| : | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI |
| 4.0 : | -.0277 | .1470 | 19.968 | .00 : | .0731 | .1932 | 4.476 | .00 : | .1357 | .0553 | .934 | .00 : |
| 8.0 : | -.0122 | .1356 | 94.494 | .00 : | .0419 | .1780 | 12.524 | .00 : | .0831 | .0744 | 2.985 | .00 : |
| 16.0 : | -.0054 | .1127 | 402.486 | .00 : | .0240 | .1477 | 31.472 | .00 : | .0509 | .1125 | 12.007 | .00 : |
| 39.2* : | .0094 | .05372640.916 | | .00 : | .0458 | .0513 | 58.882 | .00 : | .0378 | .1569 | 61.719 | .00 : |

A-62

OBSERVED DATA

| | DATE 03/03/77 | TIME 07:00:00 | DATE 03/03/77 | TIME 08:00:00 | DATE 03/03/77 | TIME 09:00:00 | |
|-----------------|---|---|--|---|---------------------------------------|---------------------------------------|---------------------------------------|
| WEATHER | WEATHER | WEATHER | WEATHER | WEATHER | WEATHER | WEATHER | |
| TEMP DEG C | -10.3 | TEMP DEG C | -10.0 | TEMP DEG C | -10.4 | TEMP DEG C | -6.4 |
| DEW POINT DEG C | -13.1 | DEW POINT DEG C | -10.4 | DEW POINT DEG C | -10.5 | DEW POINT DEG C | -10.5 |
| VISIBILITY (MI) | 30 | VISIBILITY (MI) | 60 | VISIBILITY (MI) | 60 | VISIBILITY (MI) | 60 |
| CLD (TENTHS) | LOW | HI 8 TOTL | 8:LOW | HI 10 TOTL | 10:LOW | HI 10 TOTL | 10:LOW |
| CLD HT (M) | LOW | HI 7620 | : LOW | HI 7620 | : LOW | HI 7620 | : LOW |
| EXPONENTS | A = -.31 B = -.63 P = .38 | A = -.68 B = -1.18 P = .36 | A = -.18 B = -.25 P = .10 | | | | |
| NET RADIATION | -6.91 MW/CM2 | 1.81 MW/CM2 | 11.58 MW/CM2 | | | | |
| RICHARDSON NO. | (4M) .20 (8M) .48 (16M) 1.20 : (4M) .07 (8M) .33 (16M) 1.59 : (4M) -.30 (8M) -.83 (16M) -1.44 : | (39.192M) 12.66 (OBSERVED DATA) : (39.192M) 7.12 (OBSERVED DATA) : (39.192M) 1.18 (OBSERVED DATA) : | (4M) 1.98 (8M) 4.96 (16M) 14.29 : (4M) .35 (8M) 2.47 (16M) 24.81 : (4M) -.83 (8M) -1.11 (16M) -.96 : | (4M) .0844 (8M) .0668 (16M) .0455 : (4M) .0943 (8M) .0668 (16M) .0294 : (4M) .2730 (8M) .2744 (16M) .2685 : | | | |
| (1/L)*10 | | | | | | | |
| USTAR | | | | | | | |
| HEIGHT (M) | WD (M/S) WS (M/S) SGA (DEG) SGE (DEG) | WD (M/S) WS (M/S) SGA (DEG) SGE (DEG) | WD (M/S) WS (M/S) SGA (DEG) SGE (DEG) | WD (M/S) WS (M/S) SGA (DEG) SGE (DEG) | WD (M/S) WS (M/S) SGA (DEG) SGE (DEG) | WD (M/S) WS (M/S) SGA (DEG) SGE (DEG) | WD (M/S) WS (M/S) SGA (DEG) SGE (DEG) |
| 1. | -11.44 | 18.9 | 112. | 1.39 | -10.18 | 10.6 | -4.55 |
| 2. | 123. | 1.53 | -11.44 | 18.9 | 112. | 1.39 | -10.18 |
| 4. | 114. | 1.80 | -11.27 | 16.7 | 105. | 1.54 | -10.14 |
| 8. | 123. | 2.17 | -11.20 | 13.9 | 119. | 1.58 | -10.23 |
| 16. | 111. | 2.91 | -10.94 | 10.2 | 121. | 2.01 | -10.15 |
| 32. | 138. | 4.53 | -6.01 | 6.0 | 150. | 4.22 | -6.93 |
| 48. | 148. | -5.10 | 9.3 | 1.1 | 173. | -4.08 | .8 |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WS (M/S) | TEMP (C) | SGA (DEG) | SGE (DEG) | WS (M/S) | TEMP (C) | SGA (DEG) | SGE (DEG) | WS (M/S) | TEMP (C) | SGA (DEG) | SGE (DEG) |
|------------|-------------|-------------|--------------|--------------|-------------|-------------|--------------|--------------|-------------|-------------|--------------|--------------|
| 1.0 | 1.08 | -11.78 | 24.5 | 13.6 | .93 | -10.22 | 28.2 | 75.7 | 2.73 | -4.65 | 9.2 | 8.3 |
| 2.0 | 1.41 | -11.65 | 19.7 | 8.8 | 1.19 | -10.22 | 17.6 | 33.4 | 2.93 | -4.72 | 8.2 | 7.0 |
| 4.0 | 1.84 | -11.39 | 15.9 | 5.7 | 1.53 | -10.21 | 11.0 | 14.7 | 3.14 | -4.83 | 7.2 | 5.9 |
| 8.0 | 2.39 | -10.85 | 12.8 | 3.7 | 1.96 | -10.10 | 6.9 | 6.5 | 3.37 | -5.04 | 6.4 | 4.9 |
| 16.0 | 3.12 | -9.74 | 10.3 | 2.4 | 2.51 | -9.61 | 4.3 | 2.9 | 3.61 | -5.38 | 5.6 | 4.2 |
| 32.0 | 4.07 | -7.32 | 8.3 | 1.6 | 3.22 | -7.50 | 2.7 | 1.3 | 3.88 | -5.71 | 5.0 | 3.5 |
| 48.0 | 4.75 | -4.66 | 7.3 | 1.2 | 3.72 | -3.89 | 2.0 | .8 | 4.04 | -5.58 | 4.6 | 3.2 |
| | DU/DZ | OTH/DZ | BU*100 | RI | DU/DZ | OTH/DZ | BU*100 | RI | DU/DZ | OTH/DZ | BU*100 | RI |
| 4.0 | .1643 | .1433 | 2.543 | .00 | .1278 | .0303 | .777 | .00 | .0737 | -.0446 | -.264 | -.07 |
| 8.0 | .1071 | .1480 | 6.169 | .00 | .0820 | .0597 | 3.716 | .00 | .0396 | -.0356 | -.735 | -.42 |
| 16.0 | .0698 | .1574 | 15.375 | .00 | .0526 | .1184 | 17.894 | .00 | .0212 | -.0177 | -1.271 | -1.44 |
| 39.2* | .0139 | .0669 | 17.550 | .00 | -.0311 | .1881 | 66.283 | .00 | .0182 | .0106 | 3.969 | .00 |

* OBSERVED DATA

OBSERVED DATA

| DATE 03/03/77 | | TIME 10:00:00 | DATE 03/03/77 | TIME 11:00:00 | DATE 03/03/77 | TIME 12:00:00 |
|---------------------------|--|---|---------------------------|---------------|---------------------------|---------------|
| WEATHER | | | WEATHER | | WEATHER | |
| TEMP DEG C | | -4.1 | TEMP DEG C | | TEMP DEG C | |
| DEW POINT DEG C | | -10.6 | DEW POINT DEG C | | DEW POINT DEG C | |
| VISIBILITY (MI) | | 60 | VISIBILITY (MI) | | VISIBILITY (MI) | |
| HI 10 TOTL 10:LOW | | HI 7620 : LOW | HI 10 TOTL 10:LOW | | HI 10 TOTL 10:LOW | |
| MID | | MID | MID | | MID | |
| A = -0.24 B = .02 P = .09 | | A = -0.10 B = .03 P = .10 | A = -0.14 B = .13 P = .09 | | A = -0.14 B = .13 P = .09 | |
| NET RADIATION NO. | | 21.77 MW/CM2 | NET RADIATION NO. | | NET RADIATION NO. | |
| (1/L)*10 | | (4M) -0.43 (8M) -1.24 (16M) -2.54 | (1/L)*10 | | (1/L)*10 | |
| USTAR | | (39.192M) -0.11 (OBSERVED DATA) : (39.192M) -0.14 (OBSERVED DATA) : (39.192M) -0.36 (OBSERVED DATA) : | USTAR | | USTAR | |
| HEIGHT (M) | | (4M) -1.16 (8M) -1.65 (16M) -1.67 : (4M) -1.18 (8M) -1.66 (16M) -1.67 : (4M) -1.72 (8M) -2.47 (16M) -2.52 : | HEIGHT (M) | | HEIGHT (M) | |
| WS (M/S) | | (4M).2622 (8M).2655 (16M).2640 : (4M).2579 (8M).2625 (16M).2625 : (4M).2284 (8M).2340 (16M).2337 : | WS (M/S) | | WS (M/S) | |
| WD (DEG) | | WD | WD (DEG) | | WD (DEG) | |
| TEMP (C) | | TEMP | TEMP (C) | | TEMP (C) | |
| SIGA (DEG) | | SIGA | SIGA (DEG) | | SIGA (DEG) | |
| SIGE (DEG) | | SIGE | SIGE (DEG) | | SIGE (DEG) | |
| 1. | | -1.71 | 1. | | 1. | |
| 2. | | -1.93 | 2. | | 2. | |
| 4. | | -2.17 | 4. | | 4. | |
| 8. | | -2.36 | 8. | | 8. | |
| 16. | | -2.64 | 16. | | 16. | |
| 32. | | -2.89 | 32. | | 32. | |
| 48. | | -3.06 | 48. | | 48. | |

LEAST SQUARES FITTED DATA

| DATE 03/03/77 | | TIME 10:00:00 | DATE 03/03/77 | TIME 11:00:00 | DATE 03/03/77 | TIME 12:00:00 |
|---------------------------|--|---|---------------------------|---------------|---------------------------|---------------|
| WEATHER | | | WEATHER | | WEATHER | |
| TEMP DEG C | | -4.1 | TEMP DEG C | | TEMP DEG C | |
| DEW POINT DEG C | | -10.6 | DEW POINT DEG C | | DEW POINT DEG C | |
| VISIBILITY (MI) | | 60 | VISIBILITY (MI) | | VISIBILITY (MI) | |
| HI 10 TOTL 10:LOW | | HI 7620 : LOW | HI 10 TOTL 10:LOW | | HI 10 TOTL 10:LOW | |
| MID | | MID | MID | | MID | |
| A = -0.24 B = .02 P = .09 | | A = -0.10 B = .03 P = .10 | A = -0.14 B = .13 P = .09 | | A = -0.14 B = .13 P = .09 | |
| NET RADIATION NO. | | 21.77 MW/CM2 | NET RADIATION NO. | | NET RADIATION NO. | |
| (1/L)*10 | | (4M) -0.43 (8M) -1.24 (16M) -2.54 | (1/L)*10 | | (1/L)*10 | |
| USTAR | | (39.192M) -0.11 (OBSERVED DATA) : (39.192M) -0.14 (OBSERVED DATA) : (39.192M) -0.36 (OBSERVED DATA) : | USTAR | | USTAR | |
| HEIGHT (M) | | (4M) -1.16 (8M) -1.65 (16M) -1.67 : (4M) -1.18 (8M) -1.66 (16M) -1.67 : (4M) -1.72 (8M) -2.47 (16M) -2.52 : | HEIGHT (M) | | HEIGHT (M) | |
| WS (M/S) | | (4M).2622 (8M).2655 (16M).2640 : (4M).2579 (8M).2625 (16M).2625 : (4M).2284 (8M).2340 (16M).2337 : | WS (M/S) | | WS (M/S) | |
| WD (DEG) | | WD | WD (DEG) | | WD (DEG) | |
| TEMP (C) | | TEMP | TEMP (C) | | TEMP (C) | |
| SIGA (DEG) | | SIGA | SIGA (DEG) | | SIGA (DEG) | |
| SIGE (DEG) | | SIGE | SIGE (DEG) | | SIGE (DEG) | |
| 1.0 | | 2.57 | 1.0 | | 1.0 | |
| 2.0 | | 2.74 | 2.0 | | 2.0 | |
| 4.0 | | 2.92 | 4.0 | | 4.0 | |
| 8.0 | | 3.11 | 8.0 | | 8.0 | |
| 16.0 | | 3.31 | 16.0 | | 16.0 | |
| 32.0 | | 3.52 | 32.0 | | 32.0 | |
| 48.0 | | 3.65 | 48.0 | | 48.0 | |
| DU/DZ | | DTW/DZ | DU/DZ | | DTW/DZ | |
| RI | | RI | RI | | RI | |
| 4.0 | | 0.611 | 4.0 | | 4.0 | |
| 8.0 | | 0.325 | 8.0 | | 8.0 | |
| 16.0 | | 0.173 | 16.0 | | 16.0 | |
| 39.2* | | 0.141 | 39.2* | | 39.2* | |

* OBSERVED DATA

OBSERVED DATA

| DATE 03/03/77 TIME 16:00:00 : DATE 03/03/77 TIME 17:00:00 : DATE 03/03/77 TIME 18:00:00 : | | | | | | | | | |
|---|---------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| WEATHER : | | WEATHER : | | WEATHER : | | WEATHER : | | WEATHER : | |
| TEMP DEG C | 2.7 | TEMP DEG C | 2.3 | TEMP DEG C | 1.7 | TEMP DEG C | 1.7 | TEMP DEG C | 1.7 |
| DEW POINT DEG C | -7.9 | DEW POINT DEG C | -5.6 | DEW POINT DEG C | -6.7 | DEW POINT DEG C | -6.7 | DEW POINT DEG C | -6.7 |
| VISIBILITY (MI) | 50 | VISIBILITY (MI) | 50 | VISIBILITY (MI) | 50 | VISIBILITY (MI) | 50 | VISIBILITY (MI) | 50 |
| CLD (TENTHS) | LOW 1 MID 6 HI 3 | TOTL 10:LOW 4 HI 4 | TOTL 10:LOW 2 MID 3 HI 5 | TOTL 10:LOW 2 MID 3 HI 5 | TOTL 10:LOW 2 MID 3 HI 5 | TOTL 10:LOW 2 MID 3 HI 5 | TOTL 10:LOW 2 MID 3 HI 5 | TOTL 10:LOW 2 MID 3 HI 5 | TOTL 10:LOW 2 MID 3 HI 5 |
| CLD HT (M) | LOW 1525 MID 3660 HI 7620 | LOW 915 MID 3660 HI 7620 | LOW 1220 MID 3660 HI 7620 | LOW 1220 MID 3660 HI 7620 | LOW 1220 MID 3660 HI 7620 | LOW 1220 MID 3660 HI 7620 | LOW 1220 MID 3660 HI 7620 | LOW 1220 MID 3660 HI 7620 | LOW 1220 MID 3660 HI 7620 |
| EXPONENTS | A = -.11 B = .30 P = .06 | A = -.19 B = .02 P = .09 | A = -.06 B = .39 P = .07 | A = -.06 B = .39 P = .07 | A = -.06 B = .39 P = .07 | A = -.06 B = .39 P = .07 | A = -.06 B = .39 P = .07 | A = -.06 B = .39 P = .07 | A = -.06 B = .39 P = .07 |
| NET RADIATION | 10.54 MW/CM2 | 2.93 MW/CM2 | -6.91 MW/CM2 | -6.91 MW/CM2 | -6.91 MW/CM2 | -6.91 MW/CM2 | -6.91 MW/CM2 | -6.91 MW/CM2 | -6.91 MW/CM2 |
| RICHARDSON NO. | (4M)-1.38 (8M)-4.34 (16M)-10.1 | (4M)-.18 (8M)-.57 (16M)-1.41 | (4M) 9.62 (8M)28.27 (16M)53.18 | (4M) 9.62 (8M)28.27 (16M)53.18 | (4M) 9.62 (8M)28.27 (16M)53.18 | (4M) 9.62 (8M)28.27 (16M)53.18 | (4M) 9.62 (8M)28.27 (16M)53.18 | (4M) 9.62 (8M)28.27 (16M)53.18 | (4M) 9.62 (8M)28.27 (16M)53.18 |
| (1/L)*10 | (39.192M)-3.17 (OBSERVED DATA): | (39.192M)**** (OBSERVED DATA): | (39.192M)**** (OBSERVED DATA): | (39.192M)**** (OBSERVED DATA): | (39.192M)**** (OBSERVED DATA): | (39.192M)**** (OBSERVED DATA): | (39.192M)**** (OBSERVED DATA): | (39.192M)**** (OBSERVED DATA): | (39.192M)**** (OBSERVED DATA): |
| USTAR | (4M)-3.67 (8M)-5.71 (16M)-6.63 | (4M)-.52 (8M)-.76 (16M)-.93 | (4M)**** (8M)**** (16M)**** | (4M)**** (8M)**** (16M)**** | (4M)**** (8M)**** (16M)**** | (4M)**** (8M)**** (16M)**** | (4M)**** (8M)**** (16M)**** | (4M)**** (8M)**** (16M)**** | (4M)**** (8M)**** (16M)**** |
| | (4M).1645 (8M).1705 (16M).1714 | (4M).1266 (8M).1262 (16M).1274 | (4M).0000 (8M).0000 (16M).0000 | (4M).0000 (8M).0000 (16M).0000 | (4M).0000 (8M).0000 (16M).0000 | (4M).0000 (8M).0000 (16M).0000 | (4M).0000 (8M).0000 (16M).0000 | (4M).0000 (8M).0000 (16M).0000 | (4M).0000 (8M).0000 (16M).0000 |
| HEIGHT (M) : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | | | | | | | | | |
| 1. | 42. | 1.43 | 2.15 | 22.8 | 1.35 | 1.89 | 13.1 | 89. | 1.31 |
| 2. | 32. | 1.59 | 1.99 | 21.7 | 1.56 | 1.79 | 13.0 | 70. | 1.47 |
| 4. | 42. | 1.71 | 1.74 | 21.6 | 1.65 | 1.60 | 11.9 | 75. | 1.55 |
| 8. | 29. | 1.80 | 1.75 | 18.7 | 1.77 | 1.68 | 9.5 | 76. | 1.46 |
| 16. | 26. | 1.80 | 1.52 | 14.8 | 1.84 | 1.46 | 8.1 | 59. | 1.54 |
| 32. | 47. | 1.68 | 1.28 | 18.0 | 1.83 | 1.24 | 7.7 | 58. | 1.35 |
| 48. | | | | | | | | 67. | 1.17 |
| | | | | | | | | | 7.6 |

LEAST SQUARES FITTED DATA

| DATE 03/03/77 TIME 16:00:00 : DATE 03/03/77 TIME 17:00:00 : DATE 03/03/77 TIME 18:00:00 : | | | | | | | | | |
|---|---------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| WEATHER : | | WEATHER : | | WEATHER : | | WEATHER : | | WEATHER : | |
| TEMP DEG C | 2.7 | TEMP DEG C | 2.3 | TEMP DEG C | 1.7 | TEMP DEG C | 1.7 | TEMP DEG C | 1.7 |
| DEW POINT DEG C | -7.9 | DEW POINT DEG C | -5.6 | DEW POINT DEG C | -6.7 | DEW POINT DEG C | -6.7 | DEW POINT DEG C | -6.7 |
| VISIBILITY (MI) | 50 | VISIBILITY (MI) | 50 | VISIBILITY (MI) | 50 | VISIBILITY (MI) | 50 | VISIBILITY (MI) | 50 |
| CLD (TENTHS) | LOW 1 MID 6 HI 3 | TOTL 10:LOW 4 HI 4 | TOTL 10:LOW 2 MID 3 HI 5 | TOTL 10:LOW 2 MID 3 HI 5 | TOTL 10:LOW 2 MID 3 HI 5 | TOTL 10:LOW 2 MID 3 HI 5 | TOTL 10:LOW 2 MID 3 HI 5 | TOTL 10:LOW 2 MID 3 HI 5 | TOTL 10:LOW 2 MID 3 HI 5 |
| CLD HT (M) | LOW 1525 MID 3660 HI 7620 | LOW 915 MID 3660 HI 7620 | LOW 1220 MID 3660 HI 7620 | LOW 1220 MID 3660 HI 7620 | LOW 1220 MID 3660 HI 7620 | LOW 1220 MID 3660 HI 7620 | LOW 1220 MID 3660 HI 7620 | LOW 1220 MID 3660 HI 7620 | LOW 1220 MID 3660 HI 7620 |
| EXPONENTS | A = -.11 B = .30 P = .06 | A = -.19 B = .02 P = .09 | A = -.06 B = .39 P = .07 | A = -.06 B = .39 P = .07 | A = -.06 B = .39 P = .07 | A = -.06 B = .39 P = .07 | A = -.06 B = .39 P = .07 | A = -.06 B = .39 P = .07 | A = -.06 B = .39 P = .07 |
| NET RADIATION | 10.54 MW/CM2 | 2.93 MW/CM2 | -6.91 MW/CM2 | -6.91 MW/CM2 | -6.91 MW/CM2 | -6.91 MW/CM2 | -6.91 MW/CM2 | -6.91 MW/CM2 | -6.91 MW/CM2 |
| RICHARDSON NO. | (4M)-1.38 (8M)-4.34 (16M)-10.1 | (4M)-.18 (8M)-.57 (16M)-1.41 | (4M) 9.62 (8M)28.27 (16M)53.18 | (4M) 9.62 (8M)28.27 (16M)53.18 | (4M) 9.62 (8M)28.27 (16M)53.18 | (4M) 9.62 (8M)28.27 (16M)53.18 | (4M) 9.62 (8M)28.27 (16M)53.18 | (4M) 9.62 (8M)28.27 (16M)53.18 | (4M) 9.62 (8M)28.27 (16M)53.18 |
| (1/L)*10 | (39.192M)-3.17 (OBSERVED DATA): | (39.192M)**** (OBSERVED DATA): | (39.192M)**** (OBSERVED DATA): | (39.192M)**** (OBSERVED DATA): | (39.192M)**** (OBSERVED DATA): | (39.192M)**** (OBSERVED DATA): | (39.192M)**** (OBSERVED DATA): | (39.192M)**** (OBSERVED DATA): | (39.192M)**** (OBSERVED DATA): |
| USTAR | (4M)-3.67 (8M)-5.71 (16M)-6.63 | (4M)-.52 (8M)-.76 (16M)-.93 | (4M)**** (8M)**** (16M)**** | (4M)**** (8M)**** (16M)**** | (4M)**** (8M)**** (16M)**** | (4M)**** (8M)**** (16M)**** | (4M)**** (8M)**** (16M)**** | (4M)**** (8M)**** (16M)**** | (4M)**** (8M)**** (16M)**** |
| | (4M).1645 (8M).1705 (16M).1714 | (4M).1266 (8M).1262 (16M).1274 | (4M).0000 (8M).0000 (16M).0000 | (4M).0000 (8M).0000 (16M).0000 | (4M).0000 (8M).0000 (16M).0000 | (4M).0000 (8M).0000 (16M).0000 | (4M).0000 (8M).0000 (16M).0000 | (4M).0000 (8M).0000 (16M).0000 | (4M).0000 (8M).0000 (16M).0000 |
| HEIGHT (M) : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | | | | | | | | | |
| 1.0 | 42. | 1.43 | 2.09 | 25.3 | 4.8 | 1.33 | 1.85 | 16.1 | 7.1 |
| 2.0 | 32. | 1.59 | 2.07 | 23.4 | 5.9 | 1.42 | 1.84 | 14.2 | 7.2 |
| 4.0 | 42. | 1.71 | 2.01 | 21.7 | 7.3 | 1.51 | 1.81 | 12.4 | 7.3 |
| 8.0 | 29. | 1.80 | 1.91 | 20.1 | 9.0 | 1.61 | 1.75 | 10.9 | 7.4 |
| 16.0 | 26. | 1.80 | 1.72 | 18.6 | 11.0 | 1.72 | 1.63 | 9.6 | 7.5 |
| 32.0 | 47. | 1.68 | 1.45 | 17.2 | 13.5 | 1.83 | 1.43 | 8.4 | 7.5 |
| 48.0 | | | 1.31 | 16.4 | 15.2 | 1.90 | 1.26 | 7.8 | 7.6 |
| | | | | | | | | | |
| DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : | | | | | | | | | |
| 4.0 | .0206 | -.0164 | -.378 | -.05 | .0324 | -.0055 | -.136 | -.04 | .0080 |
| 8.0 | .0107 | -.0139 | -1.187 | -.33 | .0173 | -.0048 | -.417 | -.12 | .0042 |
| 16.0 | .0056 | -.0089 | -2.822 | -1.20 | .0092 | -.0034 | -1.037 | -1.05 | .0022 |
| 39.2* | -.0075 | -.0050 | -8.991 | -100.35 | -.0006 | -.0037 | -6.103 | -14.76 | .0012 |
| | | | | | | | | | |

* OBSERVED DATA

| | : DATE | 03/03/77 | TIME | 19:00:00 | : | DATE | 03/03/77 | TIME | 20:00:00 | : | DATE | 03/03/77 | TIME | 21:00:00 | : | |
|----------------|--------|-----------------|-----------|------------------|-----------|-----------------|------------------|-----------|----------|------------------|-----------------|------------|------------------|------------------|-------------|-------------|
| | : | WEATHER | : | : | : | WEATHER | : | : | : | : | WEATHER | : | : | : | | |
| | : | TEMP DEG C | -0.1 | : | : | TEMP DEG C | 0.1 | : | : | : | TEMP DEG C | -1.4 | : | : | | |
| | : | DEW POINT DEC C | -6.7 | : | : | DEW POINT DEC C | -8.1 | : | : | : | DEW POINT DEC C | -5.3 | : | : | | |
| | : | VISIBILITY (MI) | 50 | : | : | VISIBILITY (MI) | 25 | : | : | : | VISIBILITY (MI) | 25 | : | : | | |
| CLD (TENTHS) | : | LOW | 0 MID | 3 HI | 7 TOTL | 10:LOW | 0 MID | 0 HI | 10 TOTL | 10:LOW | 0 MID | 10 HI | 0 TOTL | 10: | | |
| CLD HT (M) | : | LOW | MID | 2440 | HI | 7620 | LOW | MID | HI | 7620 | LOW | MID | 4570 | HI | | |
| EXPONENTS | : | A = | -0.19 | B = | -0.42 | P = | -0.20 | : | : | : | A = | -0.04 | B = | .14 | | |
| NET RADIATION | : | : | -4.33 | MMW/CM2 | : | : | -2.93 | MMW/CM2 | : | : | : | -2.51 | MMW/CM2 | : | | |
| RICHARDSON NO. | : | (4M) | 3.06 | (8M) | 13.30 | (16M) | 39.87 | : | : | : | (4M) | .10 | (8M) | .28(16M) .53 | | |
| | : | (39.192M) | .00 | (OBSERVED DATA): | (39.192M) | .79 | (OBSERVED DATA): | (39.192M) | .00 | (OBSERVED DATA): | (39.192M) | .00 | (OBSERVED DATA): | .53 | | |
| (1/L)*10 | : | (4M)***** | (8M)***** | (16M)***** | (4M)***** | (8M)***** | (16M)***** | : | : | : | (4M) | .65 | (8M) | 1.82 (16M) 3.02: | | |
| USTAR | : | (4M).0003 | (8M).0000 | (16M).0000 | (4M).0000 | (8M).0000 | (16M).0000 | : | : | : | (4M).1861 | (8M).1319 | (16M).0990: | : | | |
| HEIGHT (M) | : | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE |
| | : | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (DEG):(DEG) | (M/S) | (C) | (DEG) | (DEG):(DEG) | (M/S) | (C) | (DEG) | (DEG):(DEG) | (DEG):(DEG) |
| 1. | : | 189. | .64 | .53 | 3.1 | : | 41. | .78 | -0.05 | 4.3 | : | 5. | 2.80 | .76 | 8.2 | : |
| 2. | : | 198. | .71 | .85 | 2.5 | : | 29. | .94 | .42 | 3.6 | : | 355. | 3.27 | .86 | 7.7 | : |
| 4. | : | 167. | .62 | .98 | 16.2 | : | 1.0: 261. | .53 | .86 | 70.5 | : | .3: | 3.80 | .92 | 6.3 | 4.0: |
| 8. | : | 62. | .58 | 1.18 | .4 | : | .0: 234. | .63 | 1.22 | 48.7 | : | 21.9: 350. | 4.20 | 1.03 | 6.1 | 4.3: |
| 16. | : | 129. | .31 | 1.20 | .3 | : | .1: 261. | .53 | 1.15 | 63.5 | : | 1.4: 351. | 4.35 | .92 | 6.9 | 5.9: |
| 32. | : | 102. | .43 | 1.04 | 15.6 | : | 1.0: 298. | .70 | 1.03 | 68.4 | : | 2.1: | 4.31 | .76 | 7.4 | 7.8: |
| 48. | : | | | | | : | | | | | : | | | | | |

| HEIGHT (M) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : |
|--------------|------------|------------|--------------|--------------|------------|------------|--------------|--------------|------------|------------|--------------|--------------|
| 1.0 : | .86 : | .29 : | 3.7 : | 1.7 : | .85 : | -.01 : | 2.4 : | .5 : | 2.69 : | .72 : | 7.8 : | 1.7 : |
| 2.0 : | .74 : | .37 : | 3.3 : | 1.3 : | .79 : | .09 : | 4.7 : | .7 : | 2.96 : | .75 : | 7.6 : | 2.2 : |
| 4.0 : | .65 : | .52 : | 2.9 : | .9 : | .74 : | .27 : | 9.4 : | .9 : | 3.26 : | .80 : | 7.4 : | 2.8 : |
| 8.0 : | .56 : | .78 : | 2.5 : | .7 : | .69 : | 18.5 : | 36.6 : | 1.3 : | 3.59 : | .88 : | 7.1 : | 3.7 : |
| 16.0 : | .49 : | 1.17 : | 2.2 : | .5 : | .64 : | 1.10 : | 72.2 : | 1.9 : | 3.95 : | .99 : | 6.9 : | 4.8 : |
| 32.0 : | .42 : | 1.42 : | 1.9 : | .4 : | .60 : | 1.44 : | 107.5 : | 2.7 : | 4.35 : | 1.00 : | 6.7 : | 6.2 : |
| 48.0 : | .39 : | .95 : | 1.8 : | .3 : | .58 : | .92 : | | 3.3 : | 4.60 : | .73 : | 6.6 : | 7.2 : |
| ----- | | | | | | | | | | | | |
| : | DU/DZ : | DTH/DZ : | BU*100 : | RI : | DU/DZ : | DTH/DZ : | BU*100 : | RI : | DU/DZ : | DTH/DZ : | BU*100 : | RI : |
| 4.0 : | -.0303 : | .0785 : | 10.782 : | .00 : | -.0168 : | .0957 : | 10.041 : | .00 : | .1047 : | .0315 : | .170 : | .00 : |
| 8.0 : | -.0132 : | .0646 : | 46.891 : | .00 : | -.0079 : | .0788 : | 37.865 : | .00 : | .0576 : | .0260 : | .462 : | .00 : |
| 16.0 : | -.0057 : | .0366 : | 140.543 : | .00 : | -.0037 : | .0450 : | 99.030 : | .00 : | .0317 : | .0151 : | .883 : | .00 : |
| 39.2* : | .0075 : | .0000 : | .000 : | .00 : | .0106 : | .0025 : | 37.311 : | .00 : | -.0025 : | .0000 : | .000 : | .00 : |

A-67

OBSERVED DATA

```

: DATE 03/03/77  TIME 22:00:00  :
: WEATHER :
: TEMP DEG C 0.6 :
: DEW POINT DEG C -6.3 :
: VISIBILITY (MI) 25 :
CLO (TENTHS) :LOW 0 MID 10 HI 0 TOTL 10:
CLO HT (M) : LOW MID 3660 HI :
EXPONENTS : A= -.26 B= -.07 P= .20 :
NET RADIATION : -3.63 MW/CM2 :
RICHARDSON NO.: (4M) .02 (8M) .05(16M) .10 :
: (39.192M) 1.27 (OBSERVED DATA):
(1/L)*10 : (4M) .07 (8M) .11 (16M) .16:
USTAR : (4M).2435 (8M).2270 (16M).2109:

```

```

: WD WS TEMP SIGA SIGE :
HEIGHT (M) : (DEG) (M/S) (C) (DEG) (DEG):
-----
1. : -.21 :
2. : 309. 2.70 -.12 8.5 :
4. : 298. 3.75 -.07 7.6 :
8. : 304. 4.02 .01 7.2 4.3:
16. : 294. 4.79 -.08 5.8 3.3:
32. : 293. 5.16 -.20 4.4 3.5:
48. : 303. 5.35 -.28 3.7 3.7:

```

LEAST SQUARES FITTED DATA

```

: WS TEMP SIGA SIGE :
HEIGHT (M) : (M/S) (C) (DEG) (DEG) :
-----
1.0 : 2.59 -.12 11.0 4.6 :
2.0 : 2.98 -.12 9.2 4.4 :
4.0 : 3.43 -.10 7.7 4.2 :
8.0 : 3.94 -.09 6.4 4.0 :
16.0 : 4.53 -.08 5.4 3.8 :
32.0 : 5.21 -.14 4.5 3.6 :
48.0 : 5.66 -.31 4.0 3.5 :
-----
: DU/DZ DTH/DZ BU*100 RI :
-----
4.0 : .1601 .0143 .070 .00 :
8.0 : .0920 .0122 .181 .00 :
16.0 : .0529 .0080 .357 .00 :
39.2* : .0119 .0050 1.002 .00 :

```

* OBSERVED DATA

AD-A049 036

ARMY DUGWAY PROVING GROUND UTAH
TURBULENCE MEASUREMENTS ON A FORTY-EIGHT METER TOWER IN DESERT --ETC(U)
OCT 77 A W WALDRON

F/G 4/2

UNCLASSIFIED

NL

2 of 5
AD
A049036





| | DATE 03/03/77 | TIME 23:00:00 | DATE 04/03/77 | TIME 00:00:00 | DATE 04/03/77 | TIME 01:00:00 |
|---------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| CLD (TENTHS) | WEATHER | | WEATHER SW- | | WEATHER | |
| | TEMP DEG C | -0.4 | TEMP DEG C | -1.2 | TEMP DEG C | -1.4 |
| | DEW POINT DEG C | -3.4 | DEW POINT DEG C | -2.8 | DEW POINT DEG C | -2.3 |
| | VISIBILITY (MI) | 15 | VISIBILITY (MI) | 4 | VISIBILITY (MI) | 10 |
| CLD HT (M) | LOW 1830 MID 0 HI 0 | TOTAL 10:LOW 10 MID 10 HI 0 | TOTAL 10:LOW 10 MID 10 HI 4 | TOTAL 10:LOW 10 MID 10 HI 10 | TOTAL 10:LOW 10 MID 10 HI 10 | TOTAL 10:LOW 10 MID 10 HI 10 |
| EXPONENTS | A = -.11 B = -.14 P = .15 | A = -.20 R = -.42 P = .18 | A = -.02 R = -.04 P = .24 | A = -.02 R = -.04 P = .24 | A = -.02 R = -.04 P = .24 | A = -.02 R = -.04 P = .24 |
| NFT RADIATION | (4M) .18 (8M) .48 (16M) .92 | (4M) .05 (8M) .12 (16M) .10 | (4M) .06 (8M) .11 (16M) .11 | (4M) .06 (8M) .11 (16M) .11 | (4M) .06 (8M) .11 (16M) .11 | (4M) .06 (8M) .11 (16M) .11 |
| | (39.192M)***** (OBSERVED DATA) | (39.192M) .22 (OBSERVED DATA) | (39.192M) .3.25 (OBSERVED DATA) | (39.192M) .3.25 (OBSERVED DATA) | (39.192M) .3.25 (OBSERVED DATA) | (39.192M) .3.25 (OBSERVED DATA) |
| (1/L)*10 | (4M) 1.64 (8M) 4.93 (16M) 8.50 | (4M) .24 (8M) .44 (16M) .17 | (4M) .31 (8M) .35 (16M) .38 | (4M) .31 (8M) .35 (16M) .38 | (4M) .31 (8M) .35 (16M) .38 | (4M) .31 (8M) .35 (16M) .38 |
| USTAP | (4M) .1251 (8M) .0813 (16M) .0570 | (4M) .2901 (8M) .2476 (16M) .2654 | (4M) .1481 (8M) .1385 (16M) .1385 | (4M) .1481 (8M) .1385 (16M) .1385 | (4M) .1481 (8M) .1385 (16M) .1385 | (4M) .1481 (8M) .1385 (16M) .1385 |

| HEIGHT (M) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|
| 1. | : | | -1.17 | | : | | | -1.31 | | : | | | -1.02 | | : |
| 2. | : | 2.28 | -1.18 | 10.4 | : | 331. | 3.88 | -1.34 | 6.8 | : | 358. | 2.01 | -1.00 | 9.9 | : |
| 4. | : | 2.66 | -0.85 | 8.9 | : | 320. | 4.67 | -0.92 | 5.8 | : | 349. | 2.35 | -0.71 | 9.9 | : |
| 8. | : | 2.98 | .47 | 8.1 | : | 4.3 | 4.92 | .64 | 4.9 | : | 4.4 | 2.74 | -0.25 | 10.3 | 5.4: |
| 16. | : | 3.30 | -1.33 | 6.0 | : | 3.6 | 5.78 | -1.53 | 4.2 | : | 3.5 | 3.14 | -1.08 | 10.0 | 5.8: |
| 32. | : | 3.67 | -0.34 | 6.3 | : | 2.9 | 5.90 | -0.62 | 3.6 | : | 2.6 | 3.87 | -1.07 | 9.8 | 4.8: |
| 48. | : | 3.64 | | 8.7 | : | 3.6 | 7.39 | | 3.8 | : | 2.1 | 4.27 | | 9.2 | 5.4: |

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1.0 | 2.13 | -94 | 10.2 | 5.4 | 3.49 | -1.05 | 7.6 | 10.7 | 1.69 | -88 | 10.3 | 6.0 |
| 2.0 | 2.36 | -90 | 9.5 | 4.9 | 3.95 | -1.00 | 6.6 | 8.0 | 1.99 | -85 | 10.1 | 5.8 |
| 4.0 | 2.62 | -84 | 8.8 | 4.5 | 4.46 | -.91 | 5.7 | 6.0 | 2.34 | -81 | 10.0 | 5.7 |
| 8.0 | 2.91 | -71 | 8.1 | 4.1 | 5.04 | -.76 | 5.0 | 4.5 | 2.76 | -.74 | 9.9 | 5.5 |
| 16.0 | 3.23 | -.54 | 7.6 | 3.7 | 5.70 | -.59 | 4.3 | 3.4 | 3.25 | -.72 | 9.8 | 5.4 |
| 32.0 | 3.59 | -.46 | 7.0 | 3.4 | 6.44 | -.77 | 3.8 | 2.5 | 3.83 | -1.13 | 9.6 | 5.3 |
| 48.0 | 3.81 | -.75 | 6.7 | 3.2 | 6.91 | -1.62 | 3.5 | 2.1 | 4.21 | -2.13 | 9.6 | 5.2 |
| | 00/0Z | 0TH/0Z | RU*100 | RI | 00/0Z | 0TH/0Z | BU*100 | RI | 00/0Z | 0TH/0Z | RU*100 | RI |
| 4.0 | .0916 | .0416 | .349 | .00 | .1823 | .0494 | .143 | .00 | .1283 | .0288 | .302 | .00 |
| 8.0 | .0509 | .0346 | .939 | .00 | .1030 | .0362 | .328 | .00 | .0756 | .0171 | .518 | .00 |
| 16.0 | .0282 | .0204 | 1.797 | .00 | .0582 | .0098 | .277 | .00 | .0445 | -.0061 | -.536 | -.46 |
| 39.2* | -.0019 | -.0157 | -6.493 | -17.04 | .0931 | -.0523 | -6.708 | -133.42 | .0250 | -.0563 | -19.029 | -449.76 |

A-69

OBSERVED DATA

| DATE 04/03/77 TIME 02:00:00 : DATE 04/03/77 TIME 03:00:00 : DATE 04/03/77 TIME 04:00:00 : | | | | | | | | | |
|---|---|-----------------|---|-----------------|--|-----------------|--|-----------------|-----------------|
| WEATHER : | | WEATHER : | | WEATHER : | | WEATHER : | | WEATHER : | |
| TEMP DEG C | -2.1 | TEMP DEG C | -4.0 | TEMP DEG C | -4.0 | TEMP DEG C | -4.6 | TEMP DEG C | -4.6 |
| DEW POINT DEG C | -2.8 | DEW POINT DEG C | -4.3 | DEW POINT DEG C | -4.3 | DEW POINT DEG C | -5.6 | DEW POINT DEG C | -5.6 |
| VISIBILITY (MI) | 10 | VISIBILITY (MI) | 15 | VISIBILITY (MI) | 15 | VISIBILITY (MI) | 10 | VISIBILITY (MI) | 10 |
| CLD (TENTHS) | LOW 10 MID HI | TOTAL | 10:LOW 2 MID HI | TOTAL | 2:LOW 5 MID HI | TOTAL | 5:LOW 10 MID HI | TOTAL | 5:LOW 10 MID HI |
| CLD HT (M) | LOW 1220 MID HI | HI | LOW 1220 MID HI | HI | LOW 1220 MID HI | HI | LOW 1220 MID HI | HI | HI |
| EXPONENTS | A = -.28 B = -.38 P = .25 | | A = -.33 B = -.43 P = .22 | | A = -.11 B = -.04 P = .22 | | A = -.11 B = -.04 P = .22 | | |
| NET RADIATION | -6.56 MW/CM2 | | -5.44 MW/CM2 | | -2.51 MW/CM2 | | -2.51 MW/CM2 | | |
| RICHARDSON NO.: | (4M) .03 (8M) .06 (16M) .05 : (4M) .02 (8M) .06 (16M) .09 : (4M) .08 (8M) .20 (16M) .30 : | | (39.192M) -.46 (OBSERVED DATA): (39.192M) -.25 (OBSERVED DATA): (39.192M) -.24 (OBSERVED DATA): | | (4M) .12 (8M) .46 (16M) .97 (16M) 1.04 : | | (4M) .12 (8M) .46 (16M) .97 (16M) 1.04 : | | |
| (1/L)*10 | (4M) .10 (8M) .14 (16M) .14 | | (4M) .06 (8M) .08 (16M) .14 | | (4M) .12 (8M) .12 (16M) .12 | | (4M) .12 (8M) .12 (16M) .12 | | |
| USTAR | (4M) .2866 (8M) .2778 (16M) .3030 : (4M) .3457 (8M) .3177 (16M) .3117 : (4M) .1411 (8M) .1152 (16M) .1062 : | | | | | | | | |
| HEIGHT (M) : (DEG) (M/S) (C) TEMP SIGA SIGE : (DEG) (DEG) (M/S) (C) TEMP SIGA SIGE : | | | | | | | | | |
| 1. | 344. | 3.55 | -1.63 | 6.8 | 6.2 | 349. | 4.26 | -1.57 | 6.2 |
| 2. | 333. | 4.22 | -1.52 | 6.2 | 5.7 | 338. | 4.90 | -1.25 | 5.7 |
| 4. | 341. | 4.79 | -.97 | 5.4 | 4.7 | 347. | 5.54 | -.74 | 4.7 |
| 8. | 330. | 5.79 | -1.33 | 4.1 | 3.6 | 335. | 6.37 | -1.48 | 3.6 |
| 16. | 330. | 6.97 | -1.19 | 3.5 | 2.9 | 337. | 7.66 | -1.04 | 2.9 |
| 32. | 343. | 7.81 | | 2.9 | 2.1 | 351. | 8.51 | | 2.1 |
| 48. | | | | | | | | | |

LEAST SQUARES FITTED DATA

| HEIGHT (M) : WS TEMP SIGA SIGE : WS TEMP SIGA SIGE : | | | | | | | | | |
|--|-------|--------|--------|--------|-------|--------|--------|-------|-------|
| DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : | | | | | | | | | |
| 1.0 | 2.96 | -1.49 | 8.8 | 10.6 | 3.61 | -1.47 | 8.6 | 11.3 | 1.73 |
| 2.0 | 3.51 | -1.45 | 7.3 | 8.1 | 4.19 | -1.43 | 6.9 | 8.4 | 2.01 |
| 4.0 | 4.16 | -1.37 | 6.0 | 6.2 | 4.87 | -1.37 | 5.5 | 6.2 | 2.35 |
| 8.0 | 4.94 | -1.25 | 5.0 | 4.8 | 5.65 | -1.25 | 4.3 | 4.6 | 2.74 |
| 16.0 | 5.86 | -1.10 | 4.1 | 3.7 | 6.56 | -1.10 | 3.5 | 3.4 | 3.19 |
| 32.0 | 6.95 | -1.23 | 3.4 | 2.8 | 7.62 | -1.10 | 2.8 | 2.5 | 3.72 |
| 48.0 | 7.68 | -1.92 | 3.0 | 2.4 | 8.32 | -1.52 | 2.4 | 2.1 | 4.07 |
| DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : | | | | | | | | | |
| 4.0 | .2383 | .0435 | .145 | .00 | .2434 | .0403 | .098 | .00 | .1205 |
| 8.0 | .1413 | .0326 | .308 | .00 | .1413 | .0323 | .233 | .00 | .0703 |
| 16.0 | .0838 | .0107 | .288 | .00 | .0821 | .0162 | .347 | .00 | .0410 |
| 39.2* | .0525 | -.0354 | -3.630 | -32.58 | .0531 | -.0198 | -1.696 | -8.11 | .0488 |

* OBSERVED DATA

| | : DATE 04/03/77 | TIME 05:00:00 | : | DATE 04/03/77 | TIME 06:00:00 | : | DATE 04/03/77 | TIME 07:00:00 | : |
|-----------------|--|--------------------------------------|--------------------------------------|-------------------|-----------------------------|------|-------------------|---------------|---|
| | : WEATHER | : | : | : WEATHER | : | : | : WEATHER | : | : |
| | : TEMP DEG C | -6.2 | : | : TEMP DEG C | -6.2 | : | : TEMP DEG C | -5.1 | : |
| | : DEW POINT DEG C | -6.6 | : | : DEW POINT DEG C | -6.6 | : | : DEW POINT DEG C | -5.4 | : |
| | : VISIBILITY (MI) | 10 | : | : VISIBILITY (MI) | 10 | : | : VISIBILITY (MI) | 10 | : |
| CLOUD (TENTHS) | : LOW 5 MID HI | TOTL | 5:LOW 8 MID HI | TOTL | 8:LOW 10 MID HI | TOTL | LO: | | |
| : CLOUD HT (M) | : LOW 1525 MID | HI | : LOW 1220 MID | HI | : LOW 915 MID | HI | | | |
| : EXPONENTS | : A = -0.17 B = -0.22 P = .24 | | : A = -.39 R = -.64 P = .21 | | : A = -.20 S = -.41 P = .20 | | | | |
| : NET RADIATION | : -3.63 MW/CM2 | | : -2.93 MW/CM2 | | : -2.93 MW/CM2 | | | | |
| RICHARDSEN NO. | : (.4M) .06 (8M) .13(16M) .15 : | (.4M) .01 (8M) .03(16M) .05 : | (.4M) .01 (8M) .03(16M) .06 : | | | | | | |
| | : (.39(.192M) -.52 (OBSERVED DATA) : | (.39(.192M) -.22 (OBSERVED DATA) : | (.39(.192M) -.08 (OBSERVED DATA) : | | | | | | |
| | : (.4M) .28 (8M) .48 (16M) .29 : | (.4M) .04 (8M) .07 (16M) .06 : | (.4M) .04 (8M) .07 (16M) .07 : | | | | | | |
| (1/L)*10 | : (.4M) .1892 (8M) .1703 (16M) .1770 : | (.4M) .3741 (8M) .3589 (16M) .3543 : | (.4M) .3822 (8M) .3631 (16M) .3481 : | | | | | | |
| USTAR | : (.4M) .1892 (8M) .1703 (16M) .1770 : | (.4M) .3741 (8M) .3589 (16M) .3543 : | (.4M) .3822 (8M) .3631 (16M) .3481 : | | | | | | |

| HEIGHT (M) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : |
|--------------|------------|------------|--------------|--------------|------------|------------|--------------|--------------|------------|------------|--------------|--------------|
| 1.0 : | 2.14 : | -1.89 : | 7.6 : | 6.4 : | 3.81 : | -2.31 : | 9.7 : | 21.8 : | 3.96 : | -2.27 : | 8.1 : | 11.9 : |
| 2.0 : | 2.53 : | -1.85 : | 6.8 : | 5.5 : | 4.42 : | -2.29 : | 7.4 : | 13.9 : | 4.54 : | -2.25 : | 7.1 : | 9.0 : |
| 4.0 : | 2.99 : | -1.77 : | 6.0 : | 4.7 : | 5.11 : | -2.26 : | 5.7 : | 8.9 : | 5.22 : | -2.23 : | 6.1 : | 6.7 : |
| 8.0 : | 3.54 : | -1.63 : | 5.4 : | 4.0 : | 5.92 : | -2.20 : | 4.3 : | 5.7 : | 5.99 : | -2.18 : | 5.3 : | 5.1 : |
| 16.0 : | 4.18 : | -1.47 : | 4.8 : | 3.5 : | 6.85 : | -2.14 : | 3.3 : | 3.7 : | 6.88 : | -2.12 : | 4.6 : | 3.8 : |
| 32.0 : | 4.94 : | -1.54 : | 4.3 : | 3.0 : | 7.94 : | -2.21 : | 2.9 : | 2.4 : | 7.90 : | -2.17 : | 4.0 : | 2.9 : |
| 48.0 : | 5.44 : | -2.17 : | 4.0 : | 2.7 : | 8.65 : | -2.53 : | 2.1 : | 1.3 : | 8.56 : | -2.42 : | 3.7 : | 2.4 : |
| ----- | | | | | | | | | | | | |
| : | DU/DZ : | DTH/DZ : | RU*100 : | RI : | DU/DZ : | DTH/DZ : | RU*100 : | RI : | DU/DZ : | DTH/DZ : | RU*100 : | RI : |
| 4.0 : | .1673 : | .0460 : | .296 : | .00 : | .2507 : | .0251 : | .056 : | .00 : | .2410 : | .0225 : | .048 : | .00 : |
| 8.0 : | .0988 : | .0352 : | .650 : | .00 : | .1451 : | .0200 : | .132 : | .00 : | .1383 : | .0185 : | .119 : | .00 : |
| 16.0 : | .0594 : | .0137 : | .725 : | .00 : | .0840 : | .0099 : | .194 : | .00 : | .0794 : | .0105 : | .205 : | .00 : |
| 39.2* : | .0481 : | -.0332 : | -6.909 : | -117.02 : | .0444 : | -.0121 : | -.964 : | -2.40 : | .0569 : | -.0073 : | -.597 : | -1.05 : |

A-71

OBSERVED DATA

```

: DATE 04/03/77 TIME 08:00:00 : DATE 04/03/77 TIME 09:00:00 :
: WEATHER : WEATHER :
: TEMP DEG C -4.2 : TEMP DEG C -2.3 :
: DEW POINT DEG C -5.5 : DEW POINT DEG C -4.6 :
: VISIBILITY (MI) 10 : VISIBILITY (MI) 20 :
: LOW 8 MID HI TOTAL 3: LOW 2 MID 4 HI 1 TOTAL 7:
: CLD HT (M) : CLD HT (M) :
: EXPONENTS : EXPONENTS :
: A = -.17 B = -.16 P = .15 : A = -.16 R = -.10 P = .13 :
: NET RADIATION : NET RADIATION :
: 1.81 MW/CM2 : 11.23 MW/CM2 :
: RICHARDSON NO.: (4M) .01 (8M) .02 (16M) .09 : (4M) -.01 (8M) -.03 (16M) .01 :
: (1/L)*10 : (39.192M) .52 (OBSERVED DATA): (39.192M) 2.26 (OBSERVED DATA):
: (4M) .02 (8M) .04 (16M) .13 : (4M) -.04 (8M) -.04 (16M) .01 :
: USTAR : (4M) .3990 (8M) .3759 (16M) .3178 : (4M) .4453 (8M) .4274 (16M) .4021 :

HEIGHT (M) : (DEG) (M/S) (C) TEMP SIGA SIGE : (DEG) (M/S) (C) TEMP SIGA SIGE :
: 1. : -1.89 : 353. : 4.86 : -1.91 : 6.7 : 356. : 5.18 : -0.91 : 6.8 :
: 2. : 343. : 5.47 : -1.74 : 6.0 : 345. : 5.86 : -0.90 : 6.3 :
: 4. : 352. : 6.13 : -1.44 : 4.8 : 4.7 : 353. : 6.53 : -0.91 : 5.7 :
: 8. : 339. : 6.72 : -2.11 : 4.8 : 4.4 : 340. : 7.05 : -1.23 : 4.8 :
: 16. : 338. : 7.42 : -1.82 : 4.1 : 3.7 : 339. : 7.62 : -1.23 : 4.3 :
: 32. : 351. : 7.78 : 4.0 : 3.5 : 352. : 7.87 : 4.3 : 3.5 :
: 48. :

```

LEAST SQUARES FITTED DATA

```

: WS TEMP SIGA SIGE : WS TEMP SIGA SIGE :
: (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) :
HEIGHT (M) :
: 1.0 : 4.44 : -1.79 : 7.4 : 6.6 : 4.85 : -0.87 : 7.7 : 5.2 :
: 2.0 : 4.92 : -1.80 : 6.6 : 5.9 : 5.31 : -0.89 : 6.9 : 4.9 :
: 4.0 : 5.45 : -1.80 : 5.9 : 5.3 : 5.81 : -0.94 : 6.2 : 4.5 :
: 8.0 : 6.04 : -1.82 : 5.2 : 4.7 : 6.36 : -1.02 : 5.5 : 4.2 :
: 16.0 : 6.69 : -1.84 : 4.7 : 4.2 : 6.96 : -1.14 : 5.0 : 3.9 :
: 32.0 : 7.41 : -1.86 : 4.2 : 3.8 : 7.62 : -1.24 : 4.5 : 3.6 :
: 48.0 : 7.87 : -1.86 : 3.9 : 3.5 : 9.04 : -1.14 : 4.2 : 3.5 :

: DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI :
: 4.0 : .1863 : .0066 : .013 : .00 : .1752 : -.0110 : -.019 : -.01 :
: 8.0 : .1032 : .0070 : .045 : .00 : .0959 : -.0071 : -.041 : -.03 :
: 16.0 : .0571 : .0080 : .166 : .00 : .0525 : .0006 : .012 : .00 :
: 39.2* : .0225 : .0073 : .700 : .00 : .0156 : .0153 : 1.418 : .00 :

```

* OBSERVED DATA

OBSERVED DATA

DATE 04/03/77 TIME 10:00:00 : DATE 04/03/77 TIME 11:00:00 : DATE 04/03/77 TIME 12:00:00 :
 WEATHER : WEATHER : WEATHER :
 TEMP DEG C 0.2 : TEMP DEG C 2.2 : TEMP DEG C 2.8 :
 DEW POINT DEG C -4.1 : DEW POINT DEG C -9.2 : DEW POINT DEG C -8.3 :
 VISIBILITY (MI) 30 : VISIBILITY (MI) 30 : VISIBILITY (MI) 50 :
 CLOUD (TENTHS) : LOW 2 MID 3 HI : TOTAL 3:LOW 3:MID 3:HI : TOTAL 3: :
 CLOUD HT (M) : LOW 1220 MID 2745 HI : LOW 1220 MID 2745 HI : LOW 1220 MID 2745 HI :
 EXPONENTS : A = -.20 R = -.10 P = .12 : A = -.13 R = .03 P = .12 : A = -.06 B = .00 P = .11 :
 NET RADIATION : 26.10 MW/CM2 : 44.24 MW/CM2 : 48.98 MW/CM2 :
 RICHARDSON NO.: (4M) -.03 (8M) -.09 (16M) -.16 : (4M) -.04 (8M) -.12 (16M) -.25 : (4M) -.04 (8M) -.11 (16M) -.23 :
 (1/L)*10 : (39.192M) 3.58 (OBSERVED DATA): (39.192M) -.29 (OBSERVED DATA): (39.192M) -.49 (OBSERVED DATA):
 USTAR : (4M) -.11 (8M) -.14 (16M) -.11 : (4M) -.13 (8M) -.17 (16M) -.17 : (4M) -.12 (8M) -.16 (16M) -.16 :
 (4M).5071 (8M).4934 (16M).4827 : (4M).5715 (8M).5565 (16M).5491 : (4M).6373 (8M).6185 (16M).6099 :

HEIGHT (M) : WS (M/S) : TEMP (C) : SIGA (DEG) : SGE (DEG) : WS (M/S) : TEMP (C) : SIGA (DEG) : SGE (DEG) : WS (M/S) : TEMP (C) : SIGA (DEG) : SGE (DEG) :
 1. : 353. : 5.79 : .18 : 7.2 : 356. : 6.53 : 1.31 : 8.1 : 4. : 7.32 : 2.03 : 10.3 :
 2. : 344. : 6.56 : -.04 : 6.4 : 347. : 7.38 : .88 : 7.4 : 355. : 8.29 : 1.74 : 9.9 :
 4. : 351. : 7.29 : -.21 : 5.2 : 355. : 8.13 : .65 : 7.1 : 3. : 9.10 : 1.49 : 9.0 :
 16. : 338. : 7.98 : -.48 : 4.2 : 342. : 9.76 : .40 : 6.2 : 4.4 : 351. : 9.67 : 1.22 : 8.5 :
 32. : 337. : 8.41 : -.69 : 3.9 : 341. : 9.31 : .06 : 5.7 : 4.5 : 350. : 10.28 : .91 : 8.8 :
 48. : 351. : 8.56 : -.71 : 4.0 : 355. : 9.51 : -.12 : 5.4 : 4.9 : 3. : 10.67 : .62 : 8.6 :

LEAST SQUARES FITTED DATA

HEIGHT (M) : WS (M/S) : TEMP (C) : SIGA (DEG) : SGE (DEG) : WS (M/S) : TEMP (C) : SIGA (DEG) : SGE (DEG) : WS (M/S) : TEMP (C) : SIGA (DEG) : SGE (DEG) :
 1.0 : 5.49 : .13 : 9.1 : 5.1 : 6.21 : 1.17 : 9.0 : 4.2 : 6.97 : 2.05 : 10.6 : 4.5 :
 2.0 : 5.93 : .08 : 7.1 : 4.8 : 6.73 : 1.10 : 8.2 : 4.3 : 7.55 : 1.99 : 10.1 : 4.5 :
 4.0 : 6.51 : -.01 : 6.1 : 4.4 : 7.30 : .99 : 7.5 : 4.4 : 8.17 : 1.87 : 9.7 : 4.5 :
 8.0 : 7.03 : -.18 : 5.3 : 4.2 : 7.92 : .77 : 6.8 : 4.5 : 8.84 : 1.64 : 9.3 : 4.5 :
 16.0 : 7.73 : -.45 : 4.6 : 3.9 : 8.59 : .40 : 6.2 : 4.6 : 9.57 : 1.25 : 9.0 : 4.5 :
 32.0 : 8.42 : -.74 : 4.0 : 3.6 : 9.31 : -.03 : 5.7 : 4.7 : 10.36 : .77 : 8.6 : 4.5 :
 48.0 : 8.95 : -.69 : 3.7 : 3.5 : 9.77 : -.08 : 5.4 : 4.7 : 10.85 : .67 : 8.4 : 4.5 :
 : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI :
 4.0 : .1860 -.0335 -.045 -.03 : .1978 -.0452 -.050 -.02 : .2156 -.0489 -.042 -.02 :
 8.0 : .1013 -.0268 -.123 -.05 : .1073 -.0386 -.141 -.06 : .1167 -.0413 -.121 -.05 :
 16.0 : .0552 -.0135 -.208 -.16 : .0582 -.0234 -.291 -.25 : .0631 -.0262 -.261 -.23 :
 39.2* : .0094 .0088 .673 .00 : .0125 -.0012 -.078 -.07 : .0244 -.0081 -.408 -.49 :

* OBSERVED DATA

| | DATE 04/03/77 | TIME 13:00:00 | DATE 04/03/77 | TIME 14:00:00 | DATE 04/03/77 | TIME 15:00:00 |
|---------------------------|--------------------------------------|--------------------------------------|--------------------------------------|---------------------------|-----------------|----------------|
| WEATHER | | | | | | |
| TEMP DEG C | 2.5 | | TEMP DEG C | 3.9 | TEMP DEG C | 4.4 |
| DEW POINT DEG C | -7.3 | | DEW POINT DEG C | -6.6 | DEW POINT DEG C | -7.0 |
| VISIBILITY (MI) | 50 | | VISIBILITY (MI) | 50 | VISIBILITY (MI) | 60 |
| LOW 2 MID HI | TOTL | 2:LOW 2 MID HI | TOTL | 2:LOW 2 MID HI | TOTL | 2:LOW 2 MID HI |
| LOW 1220 MID | HI | LOW 1525 MID | HI | LOW 1525 MID | HI | |
| A = -.08 B = -.07 P = .13 | | A = -.16 B = .03 P = .13 | | A = -.10 B = -.00 P = .14 | | |
| NET RADIATION | 47.17 MW/CM2 | 46.05 MW/CM2 | | 21.77 MW/CM2 | | |
| RICHARDSON NO. | (4M) -.03 (8M) -.09 (16M) -.20 | (4M) -.03 (8M) -.10 (16M) -.21 | (4M) -.01 (8M) -.04 (16M) -.09 | | | |
| | (39.192M) -3.12 (OBSERVED DATA) | (39.192M) -.80 (OBSERVED DATA) | (39.192M) -.54 (OBSERVED DATA) | | | |
| | (4M) -.10 (8M) -.14 (16M) -.14 | (4M) -.11 (8M) -.14 (16M) -.14 | (4M) -.05 (8M) -.06 (16M) -.07 | | | |
| (1/L)*10 | (4M) -.6426 (8M) -.6287 (16M) -.6251 | (4M) -.6444 (8M) -.6289 (16M) -.6231 | (4M) -.5821 (8M) -.5661 (16M) -.5617 | | | |
| USTAR | | | | | | |

[illegible]

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1.0 | 6.90 | 2.87 | 8.6 | 5.5 | 6.96 | 3.35 | 9.0 | 4.2 | 6.25 | 2.96 | 9.5 | 4.8 |
| 2.0 | 7.55 | 2.80 | 8.1 | 5.3 | 7.59 | 3.27 | 8.0 | 4.3 | 6.89 | 2.92 | 8.9 | 4.8 |
| 4.0 | 8.26 | 2.66 | 7.7 | 5.0 | 8.28 | 3.13 | 7.2 | 4.4 | 7.59 | 2.85 | 8.3 | 4.8 |
| 8.0 | 9.04 | 2.39 | 7.3 | 4.8 | 9.03 | 2.88 | 6.5 | 4.5 | 8.36 | 2.71 | 7.7 | 4.8 |
| 16.0 | 9.90 | 1.95 | 6.9 | 4.5 | 9.85 | 2.45 | 5.8 | 4.6 | 9.21 | 2.47 | 7.2 | 4.8 |
| 32.0 | 10.83 | 1.41 | 6.6 | 4.3 | 10.74 | 1.93 | 5.2 | 4.7 | 10.14 | 2.14 | 6.7 | 4.8 |
| 48.0 | 11.42 | 1.32 | 6.4 | 4.2 | 11.30 | 1.87 | 4.9 | 4.8 | 10.73 | 2.00 | 6.4 | 4.8 |
| | DU/DZ | DTH/DZ | BU#100 | RI | DU/DZ | DTH/DZ | BU#100 | RI | DU/DZ | DTH/DZ | BU#100 | RI |
| 4.0 | 2.487 | -0.571 | -0.48 | -0.03 | 2.396 | -0.559 | -0.46 | -0.03 | 2.450 | -0.247 | -0.24 | -0.01 |
| 8.0 | 1.361 | -0.484 | -1.35 | -0.09 | 1.306 | -0.471 | -1.31 | -0.05 | 1.349 | -0.211 | -0.69 | -0.04 |
| 16.0 | 0.744 | -0.309 | -2.88 | -0.20 | 0.712 | -0.294 | -2.76 | -0.21 | 0.743 | -0.137 | -1.48 | -0.09 |
| 39.2* | 0.100 | -0.087 | -3.97 | -0.29 | 0.175 | -0.069 | -3.20 | -0.40 | 0.181 | -0.050 | -2.59 | -0.27 |

A-74

OBSERVED DATA

| | | | | | | | | | | | | | | | | | | | |
|----------------|-----------|-----------------|------------------|-----------------|---------|------------------|-----------|-----------------|------------------|-----------------|---------|------------------|-----------|-------|------------------|-----------|---------|------------------|--|
| | | DATE 07/03/77 | | TIME 09:00:00 | | DATE 07/03/77 | | TIME 10:00:00 | | DATE 07/03/77 | | TIME 11:00:00 | | | | | | | |
| | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | | | | | | |
| | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | | | | | | |
| | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | | | | | | |
| | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | | | | | | |
| CLD (TENTHS) | LOW | MID | HI | 9 | TOTL | 9 | TOTL | 9 | TOTL | 8 | TOTL | 8 | TOTL | | | | | | |
| CLD HT (M) | LOW | MID | HI | 6095 | HI | 6095 | HI | 6095 | HI | 6095 | HI | 6095 | HI | | | | | | |
| EXPONENTS | A = -.21 | | R = -.07 | | P = .15 | | A = -.18 | | R = -.07 | | P = .13 | | A = -.21 | | R = -.06 | | P = .13 | | |
| NET RADIATION | MW/CM2 | | MW/CM2 | | MW/CM2 | | MW/CM2 | | MW/CM2 | | MW/CM2 | | MW/CM2 | | MW/CM2 | | MW/CM2 | | |
| RICHARDSON NO. | (4M) | -.04 | (8M) | -.11 | (16M) | -.20 | (4M) | -.04 | (8M) | -.10 | (16M) | -.21 | (4M) | -.08 | (8M) | -.22 | (16M) | -.44 | |
| | (39.192M) | .00 | (OBSERVED DATA): | (39.192M) | -.56 | (OBSERVED DATA): | (39.192M) | -.56 | (OBSERVED DATA): | (39.192M) | -1.52 | (OBSERVED DATA): | (39.192M) | -1.52 | (OBSERVED DATA): | (39.192M) | -1.52 | (OBSERVED DATA): | |
| (1/L)*10 | (4M) | -.13 | (8M) | -.16 | (16M) | -.14 | (4M) | -.11 | (8M) | -.15 | (16M) | -.15 | (4M) | -.23 | (8M) | -.31 | (16M) | -.30 | |
| USTAR | (4M) | .3779 | (8M) | .3764 | (16M) | .3778 | (4M) | .5231 | (8M) | .5136 | (16M) | .5113 | (4M) | .5054 | (8M) | .5009 | (16M) | .5007 | |
| | | WS | | TEMP | | SIGA | | SIGE | | WD | | WS | | TEMP | | SIGA | | SIGF | |
| HEIGHT (M) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | |
| 1. | | 7.74 | 7.63 | 10.8 | | | 5.89 | 9.36 | 8.4 | | | 5.48 | 11.90 | 11.63 | 8.9 | | | | |
| 2. | 154. | 4.26 | 7.39 | 9.9 | 167. | 6.79 | 9.06 | 7.2 | | 152. | 6.45 | 11.12 | 8.0 | | | | | | |
| 4. | 143. | 4.92 | 7.18 | 9.2 | 156. | 7.63 | 8.79 | 6.0 | 4.9 | 141. | 7.27 | 10.65 | 6.9 | 5.3 | | | | | |
| 8. | 147. | 5.48 | 6.98 | 7.7 | 159. | 8.27 | 8.58 | 5.4 | 4.2 | 138. | 7.75 | 10.45 | 5.8 | 5.1 | | | | | |
| 16. | 139. | 5.87 | 6.78 | 6.3 | 151. | 8.79 | 8.29 | 4.9 | 4.2 | 135. | 8.14 | 10.03 | 5.2 | 5.3 | | | | | |
| 32. | 138. | 6.50 | 6.62 | 5.5 | 150. | 9.09 | 8.04 | 4.9 | 4.3 | 136. | 8.34 | 9.76 | 4.6 | 5.9 | | | | | |
| 48. | 145. | 7.15 | 6.62 | 5.5 | 158. | | | | | 144. | | | | | | | | | |

LEAST SQUARES FITTED DATA

| | | WD | | TEMP | | SIGA | | SIGE | | WD | | TEMP | | SIGA | | SIGE | |
|------------|-------|--------|-------|-------|-------|--------|-------|-------|-------|--------|-------|-------|-------|--------|-------|-------|------|
| HEIGHT (M) | (M/S) | (C) | (DEG) | (M/S) | (C) | (DEG) | (M/S) | (C) | (DEG) | (M/S) | (C) | (DEG) | (M/S) | (C) | (DEG) | (M/S) | (C) |
| 1.0 | 3.90 | 7.63 | 13.2 | 6.9 | 5.57 | 9.35 | 9.1 | 5.5 | 5.30 | 11.61 | 10.5 | 4.5 | 5.30 | 11.61 | 10.5 | 4.5 | 4.5 |
| 2.0 | 4.34 | 7.58 | 11.4 | 6.6 | 6.11 | 9.29 | 8.1 | 5.2 | 5.79 | 11.52 | 9.1 | 4.7 | 5.79 | 11.52 | 9.1 | 4.7 | 4.7 |
| 4.0 | 4.83 | 7.48 | 9.9 | 6.3 | 6.71 | 9.17 | 7.1 | 4.9 | 6.32 | 11.33 | 7.9 | 4.9 | 6.32 | 11.33 | 7.9 | 4.9 | 4.9 |
| 8.0 | 5.37 | 7.30 | 8.5 | 6.0 | 7.36 | 8.96 | 6.3 | 4.7 | 6.90 | 10.99 | 6.8 | 5.1 | 6.90 | 10.99 | 6.8 | 5.1 | 5.1 |
| 16.0 | 5.98 | 7.01 | 7.4 | 5.7 | 8.07 | 8.60 | 5.6 | 4.5 | 7.53 | 10.43 | 5.9 | 5.3 | 7.53 | 10.43 | 5.9 | 5.3 | 5.3 |
| 32.0 | 6.65 | 6.67 | 6.4 | 5.4 | 8.85 | 8.16 | 5.0 | 4.2 | 8.22 | 9.81 | 5.1 | 5.5 | 8.22 | 9.81 | 5.1 | 5.5 | 5.5 |
| 48.0 | 7.08 | 6.66 | 5.8 | 5.3 | 9.35 | 8.09 | 4.6 | 4.1 | 8.66 | 9.85 | 4.7 | 5.7 | 8.66 | 9.85 | 4.7 | 5.7 | 5.7 |
| | | DU/DZ | | DT/DZ | | DU/DZ | | DT/DZ | | DU/DZ | | DT/DZ | | DU/DZ | | DT/DZ | |
| | RI | RI | RI | RI | RI | RI | RI | RI | RI | RI | RI | RI | RI | RI | RI | RI | RI |
| 4.0 | .1720 | -.0359 | -.086 | -.04 | .2073 | -.0455 | -.056 | -.04 | .1853 | -.0778 | -.107 | -.04 | .1853 | -.0778 | -.107 | -.04 | -.04 |
| 8.0 | .0957 | -.0294 | -.228 | -.11 | .1137 | -.0382 | -.157 | -.10 | .1011 | -.0649 | -.301 | -.11 | .1011 | -.0649 | -.301 | -.11 | -.11 |
| 16.0 | .0532 | -.0164 | -.411 | -.40 | .0624 | -.0234 | -.320 | -.21 | .0552 | -.0391 | -.610 | -.44 | .0552 | -.0391 | -.610 | -.44 | -.44 |
| 39.2* | .0369 | .0000 | .000 | .00 | .0187 | -.0056 | -.378 | -.56 | .0125 | -.0069 | -.540 | -.76 | .0125 | -.0069 | -.540 | -.76 | -.76 |

* OBSERVED DATA

OBSERVED DATA

DATE 07/03/77 TIME 12:00:00 : DATE 07/03/77 TIME 13:00:00 : DATE 07/03/77 TIME 14:00:00 :
 WEATHER : WEATHER : WEATHER :
 TEMP DEG C 12.2 : TEMP DEG C 13.9 : TEMP DEG C 13.9 :
 DEW POINT DEG C -5.0 : DEW POINT DEG C -5.6 : DEW POINT DEG C -6.1 :
 VISIBILITY (MI) 60 : VISIBILITY (MI) 60 : VISIBILITY (MI) 60 :
 : LOW MID HI 7 TOTL 7 : LOW MID HI 7 TOTL 7 : LOW MID HI 7 TOTL 7 :
 CLD (TENTHS) : LOW MID HI 7 TOTL 7 : LOW MID HI 7 TOTL 7 :
 CLD HT (M) : LOW MID HI 7 TOTL 7 : LOW MID HI 7 TOTL 7 :
 EXPONENTS : A = -.13 B = .15 P = .12 : A = -.11 B = .21 P = .11 : A = -.12 B = .22 P = .09 :
 NET RADIATION : MW/CM2 : MW/CM2 : MW/CM2 :
 RICHARDSON NO.: (4M) -.10 (8M) -.27 (16M) -.54 : (4M) -.12 (8M) -.34 (16M) -.67 : (4M) -.29 (8M) -.85 (16M) -1.67 :
 : (39.192M) -4.10 (OBSERVED DATA): (39.192M) -1.46 (OBSERVED DATA): (39.192M) -.34 (OBSERVED DATA):
 (1/L)*10 : (4M) -.28 (8M) -.37 (16M) -.37 : (4M) -.35 (8M) -.47 (16M) -.45 : (4M) -.81 (8M) -1.14 (16M) -1.11 :
 USTAR : (4M).4733 (8M).4683 (16M).4659 : (4M).4611 (8M).4561 (16M).4514 : (4M).3496 (8M).3489 (16M).3427 :

HEIGHT (M) : WS TEMP SGA SGE : WS TEMP SGA SGE : WS TEMP SGA SGE :
 : (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) :
 1. : 13.04 : 14.16 : 14.90 :
 2. : 165. : 5.18 12.75 11.9 : 5.02 13.86 11.9 : 3.63 14.63 17.1 -99.9 :
 4. : 154. : 5.97 12.30 11.3 : 5.73 13.35 11.2 : 4.12 14.23 16.6 :
 8. : 157. : 6.59 11.86 9.9 : 6.36 12.89 10.1 : 4.44 13.77 15.5 :
 16. : 149. : 7.08 11.68 8.8 : 6.72 12.79 8.7 : 4.63 13.80 14.6 :
 32. : 147. : 7.47 11.33 8.7 : 7.03 12.46 8.3 : 4.69 13.52 12.8 :
 48. : 154. : 7.58 11.08 7.8 : 7.18 12.24 9.0 : 4.91 13.33 11.8 :
 : 14.90 : 14.90 : 14.90 :

LEAST SQUARES FITTED DATA

HEIGHT (M) : WS TEMP SGA SGE : WS TEMP SGA SGE : WS TEMP SGA SGE :
 : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) :
 1.0 : 4.98 12.75 13.1 3.5 : 4.86 13.84 12.7 3.4 : 3.58 14.61 19.3 4.8 :
 2.0 : 5.41 12.66 12.0 3.9 : 5.24 13.75 11.8 4.0 : 3.79 14.54 17.8 5.6 :
 4.0 : 5.86 12.49 10.9 4.3 : 5.65 13.58 10.9 4.6 : 4.03 14.40 16.4 6.5 :
 8.0 : 6.36 12.18 10.0 4.8 : 6.09 13.26 10.1 5.3 : 4.27 14.15 15.1 7.6 :
 16.0 : 6.90 11.67 9.1 5.3 : 6.57 12.76 9.4 6.2 : 4.53 13.75 14.0 8.9 :
 32.0 : 7.48 11.11 8.4 5.8 : 7.08 12.23 8.7 7.1 : 4.81 13.32 12.9 10.4 :
 48.0 : 7.85 11.17 7.9 6.2 : 7.40 12.33 8.3 7.8 : 4.98 13.41 12.3 11.4 :
 : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI :
 4.0 : .1591 -.0703 -.112 -.05 : .1421 -.0706 -.121 -.02 : .0796 -.0547 -.184 -.05 :
 8.0 : .0863 -.0584 -.317 -.13 : .0766 -.0581 -.343 -.17 : .0422 -.0447 -.534 -.24 :
 16.0 : .0468 -.0345 -.638 -.54 : .0413 -.0332 -.675 -.67 : .0224 -.0245 -1.044 -.83 :
 39.2* : .0069 -.0056 -.527 -.33 : .0094 -.0037 -.392 -.39 : .0137 -.0019 -.429 -.68 :
 * OBSERVED DATA

OBSERVED DATA

```

: DATE 07/03/77 TIME 15:00:00 :
: WEATHER :
: TEMP DEG C 15.0 :
: DEW POINT DEG C -5.0 :
: VISIBILITY (MI) 60 :
CLD (TENTHS) : LOW MID 4 HI 6 TOTL 10:
CLD HT (M) : LOW MID 3660 HI 6095 :
EXPONENTS : A= -.18 B= .15 P= .11 :
NET RADIATION : 22.46 MW/CM2 :
RICHARDSON NO. : (4M) -.14 (8M) -.40 (16M) -.79 :
: (39.192M) -1.45 (OBSERVED DATA):
(1/L)*10 : (4M) -.41 (8M) -.55 (16M) -.53:
USTAR : (4M).3658 (8M).3637 (16M).3607:

```

```

: WD WS TEMP SIGA SIGE :
HEIGHT (M) : (DEG) (M/S) (C) (DEG) (DEG):
-----
1. : 15.80 :
2. : 170. 3.95 15.57 12.4 :
4. : 159. 4.51 15.18 11.1 :
8. : 162. 4.98 14.68 10.3 5.3:
16. : 155. 5.25 14.74 8.9 6.2:
32. : 155. 5.54 14.43 7.3 6.4:
48. : 161. 5.69 14.21 7.1 7.2:

```

LEAST SQUARES FITTED DATA

```

: WS TEMP SIGA SIGE :
HEIGHT (M) : (M/S) (C) (DEG) (DEG) :
-----
1.0 : 3.81 15.53 14.4 4.0 :
2.0 : 4.11 15.46 12.7 4.4 :
4.0 : 4.44 15.33 11.2 4.9 :
8.0 : 4.79 15.08 9.8 5.4 :
16.0 : 5.17 14.68 8.7 6.0 :
32.0 : 5.58 14.24 7.6 6.7 :
48.0 : 5.83 14.29 7.1 7.1 :
-----
: DU/DZ DTH/DZ BU*100 RI :
-----
4.0 : .1131 -.0540 -.149 -.02 :
8.0 : .0610 -.0444 -.421 -.20 :
16.0 : .0329 -.0251 -.820 -.79 :
39.2* : .0094 -.0038 -.624 -.73 :

```

* OBSERVED DATA

[illegible]

| HEIGHT (M) | WD :(DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|--------------|-------------|-------------|---------------|---------------|-------------|-------------|-------------|---------------|---------------|-------------|-------------|-------------|---------------|---------------|
| 1. | : | 124. | 16.05 | 8.5 | : | : | 2.38 | 15.02 | 7.4 | : | : | 2.45 | 12.26 | | |
| 2. | : | 124. | 15.98 | 8.5 | : | : | 15.17 | | | : | : | 145. | 12.52 | 6.6 | |
| 4. | : | | 15.78 | | : | : | 2.91 | 15.18 | | | | 3.16 | 12.74 | | |
| 8. | : | 117. | 15.40 | 6.3 | 4.5: | 135. | 3.48 | 14.99 | 5.3 | 3.9: | 138. | 4.01 | 12.90 | 3.5 | 2.6: |
| 16. | : | 109. | 15.56 | 5.8 | 4.9: | 130. | 4.20 | 15.42 | 5.5 | 3.0: | 131. | 5.18 | 13.81 | 2.2 | 1.6: |
| 32. | : | 108. | 15.24 | 5.8 | 4.9: | 135. | 4.90 | 15.48 | 4.4 | 2.6: | 134. | 6.99 | 14.97 | 1.7 | .6: |
| 48. | : | 118. | 14.97 | 6.9 | 5.2: | 147. | 5.43 | 15.41 | 3.5 | 2.7: | 144. | 7.89 | 15.49 | 1.1 | .4: |

| HEIGHT (M) : | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|--------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1.0 : | 3.74 | 15.93 | 8.2 | 3.9 | 2.02 | 15.05 | 8.7 | 5.9 | 1.88 | 12.32 | 10.1 | 24.3 |
| 2.0 : | 4.08 | 15.89 | 7.7 | 4.1 | 2.42 | 15.07 | 7.5 | 5.0 | 2.43 | 12.43 | 6.9 | 11.9 |
| 4.0 : | 4.45 | 15.83 | 7.3 | 4.3 | 2.89 | 15.12 | 6.5 | 4.3 | 3.15 | 12.65 | 4.7 | 5.8 |
| 8.0 : | 4.86 | 15.70 | 6.9 | 4.5 | 3.45 | 15.20 | 5.6 | 3.7 | 4.07 | 13.07 | 3.3 | 2.8 |
| 16.0 : | 5.30 | 15.47 | 6.5 | 4.8 | 4.13 | 15.34 | 4.8 | 3.2 | 5.27 | 13.81 | 2.2 | 1.4 |
| 32.0 : | 5.78 | 15.15 | 6.1 | 5.0 | 4.94 | 15.47 | 4.2 | 2.7 | 6.82 | 14.91 | 1.5 | .7 |
| 48.0 : | 6.09 | 15.01 | 5.9 | 5.2 | 5.48 | 15.42 | 3.8 | 2.5 | 7.93 | 15.51 | 1.2 | .4 |

| | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI |
|-------|---------|--------|--------|-------|---------|--------|--------|-----|---------|--------|--------|-----|
| 4.0 | : 1.294 | -.0228 | -.062 | -.02 | : 1.730 | .0314 | .205 | .00 | : 2.734 | .1164 | .645 | .00 |
| 8.0 | : .0706 | -.0194 | -.179 | -.07 | : .1034 | .0279 | .509 | .00 | : .1769 | .1065 | 1.408 | .00 |
| 16.0 | : .0385 | -.0126 | -.390 | -.29 | : .0618 | .0210 | 1.070 | .00 | : .1145 | .0869 | 2.736 | .00 |
| 39.2* | : .0087 | -.0069 | -1.048 | -1.53 | : .0331 | .0056 | 1.111 | .00 | : .0563 | .0425 | 4.057 | .00 |

A-78

OBSERVED DATA

| | DATE 07/03/77 | TIME 19:00:00 | DATE 07/03/77 | TIME 20:00:00 | DATE 07/03/77 | TIME 21:00:00 | | | | | | | | | | | | | | |
|----------------|--------------------------------|----------------------------------|-----------------------------------|-----------------------------------|-----------------|----------------------|---------|------|-------|-------|---------|-------|------|-------|-------|---------|-------|------|-------|-------|
| | WEATHER | | WEATHER | | WEATHER | | | | | | | | | | | | | | | |
| | TEMP DEG C | 10.8 | TEMP DEG C | 9.6 | TEMP DEG C | 8.6 | | | | | | | | | | | | | | |
| | DEW POINT DEG C | -2.6 | DEW POINT DEG C | -4.5 | DEW POINT DEG C | -5.2 | | | | | | | | | | | | | | |
| | VISIBILITY (MI) | 50 | VISIBILITY (MI) | 25 | VISIBILITY (MI) | 25 | | | | | | | | | | | | | | |
| CLD (TENTHS) | LOW | MID 9 HI 1 | TOTL 10:LOW | MID 8 HI 1 | TOTL 8:LOW | MID 7 HI 1 | TOTL 7: | | | | | | | | | | | | | |
| CLD HT (M) | : LOW | MID 3660 HI 6095 | : LOW | MID 3660 HI | : LOW | MID 3660 HI | | | | | | | | | | | | | | |
| EXPONENTS | : A= | .04 B= .56 P= .30 | : A= | .08 B= .04 P= .27 | : A= | -.44 B= -.20 P= .59 | | | | | | | | | | | | | | |
| NET RADIATION | | -7.60 MW/CM2 | | -5.79 MW/CM2 | | -5.44 MW/CM2 | | | | | | | | | | | | | | |
| RICHARDSON NO. | (4M) | .47 (8M) 1.07 (16M) 2.00 | : (4M) | .78 (8M) 1.97 (16M) 4.39 | : (4M) | .17 (8M) .27 (16M) | .37 | | | | | | | | | | | | | |
| | (39.192M)***** | (OBSERVED DATA): | (39.192M) | .19 (OBSERVED DATA): | (39.192M) | .17 (OBSERVED DATA): | | | | | | | | | | | | | | |
| (1/L)*10 | (4M) | 9.35 (8M)22.93 (16M)38.73 | : (4M)24.96 (8M)75.26 (16M)***** | : (4M) 1.47 (8M) 1.66 (16M) 1.50: | | | | | | | | | | | | | | | | |
| USTAR | (4M).0566 (8M).0380 (16M).0278 | : (4M).0341 (8M).0193 (16M).0113 | : (4M).0629 (8M).0728 (16M).0890: | | | | | | | | | | | | | | | | | |
| HEIGHT (M) | : WD | WS | TEMP | SIGA | SIGE | : WD | WS | TEMP | SIGA | SIGE | : WD | WS | TEMP | SIGA | SIGE | : WD | WS | TEMP | SIGA | SIGE |
| | : (DEG) | (M/S) | (C) | (DEG) | (DEG) | : (DEG) | (M/S) | (C) | (DEG) | (DEG) | : (DEG) | (M/S) | (C) | (DEG) | (DEG) | : (DEG) | (M/S) | (C) | (DEG) | (DEG) |
| 1. | | | 8.67 | | | | | 6.46 | | | | | 8.54 | | | | | | | |
| 2. | : 148. | 1.43 | 9.79 | 5.1 | : 18. | 1.68 | 7.40 | 10.9 | : 20. | .91 | 9.10 | 16.6 | | | | | | | | |
| 4. | | 1.93 | 10.90 | | | 1.82 | 8.45 | | | 1.31 | 9.53 | | | | | | | | | |
| 8. | : 147. | 2.37 | 11.15 | 3.2 | : 32. | 1.56 | 8.86 | 16.9 | 8.3 | 148. | 1.85 | 10.03 | 6.1 | 3.6: | | | | | | |
| 16. | : 144. | 3.17 | 12.15 | 2.5 | : 89. | 1.21 | 10.11 | 44.9 | 23.0 | 162. | 2.64 | 11.02 | 6.2 | 3.9: | | | | | | |
| 32. | : 167. | 3.59 | 14.27 | 4.1 | : 169. | 2.76 | 12.03 | 24.6 | 14.6 | 181. | 4.35 | 12.23 | 4.6 | 3.3: | | | | | | |
| 48. | : 191. | 3.60 | 14.54 | 6.9 | : 193. | 5.06 | 13.68 | 8.7 | 9.7 | 197. | 6.25 | 13.16 | 3.7 | 2.4: | | | | | | |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WS | TEMP | SIGA | SIGE | WS | TEMP | SIGA | SIGE | WS | TEMP | SIGA | SIGE |
|------------|---------|--------|--------|-------|---------|--------|--------|-------|---------|--------|--------|-------|
| | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) |
| 1.0 | : 1.24 | 9.42 | 3.7 | .2 | : 1.10 | 7.16 | 14.6 | 11.2 | : .57 | 8.87 | 19.9 | 6.0 |
| 2.0 | : 1.53 | 9.66 | 3.8 | .3 | : 1.32 | 7.38 | 15.4 | 11.6 | : .86 | 9.03 | 14.7 | 5.2 |
| 4.0 | : 1.89 | 10.14 | 3.9 | .5 | : 1.59 | 7.82 | 16.2 | 11.9 | : 1.29 | 9.34 | 10.8 | 4.5 |
| 8.0 | : 2.32 | 11.01 | 4.0 | .7 | : 1.92 | 8.64 | 17.1 | 12.3 | : 1.95 | 9.92 | 8.0 | 3.9 |
| 16.0 | : 2.86 | 12.47 | 4.1 | 1.1 | : 2.31 | 10.11 | 18.0 | 12.7 | : 2.94 | 10.95 | 5.9 | 3.4 |
| 32.0 | : 3.52 | 14.26 | 4.3 | 1.6 | : 2.78 | 12.32 | 19.0 | 13.1 | : 4.43 | 12.41 | 4.3 | 3.0 |
| 48.0 | : 3.98 | 14.52 | 4.3 | 2.0 | : 3.10 | 13.56 | 19.6 | 13.3 | : 5.63 | 13.09 | 3.6 | 2.7 |
| | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI |
| 4.0 | : .1317 | .2343 | 3.648 | .00 | : .0990 | .2203 | 4.835 | .00 | : .1818 | .1598 | 5.301 | .00 |
| 8.0 | : .0811 | .2046 | 8.380 | .00 | : .0596 | .2013 | 12.165 | .00 | : .1370 | .1444 | 8.422 | .00 |
| 16.0 | : .0499 | .1453 | 15.616 | .00 | : .0359 | .1633 | 27.115 | .00 | : .1032 | .1137 | 11.637 | .00 |
| 39.2* | : .0006 | .0269 | 10.888 | .00 | : .1438 | .1131 | +1.374 | .00 | : .1188 | .0681 | 13.248 | .00 |

* OBSERVED DATA

[illegible]

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1.0 | 3.14 | 9.84 | 9.9 | 30.5 | 3.71 | 10.00 | 7.9 | 24.9 | 1.58 | 6.87 | 14.0 | 13.0 |
| 2.0 | 3.91 | 10.03 | 7.2 | 16.1 | 4.49 | 10.14 | 6.4 | 13.8 | 2.16 | 7.07 | 11.8 | 10.5 |
| 4.0 | 4.88 | 10.40 | 5.1 | 8.5 | 5.44 | 10.42 | 5.2 | 7.7 | 2.94 | 7.46 | 10.0 | 8.5 |
| 8.0 | 6.09 | 11.08 | 3.7 | 4.5 | 6.59 | 10.93 | 4.2 | 4.3 | 4.00 | 8.19 | 8.5 | 6.8 |
| 16.0 | 7.60 | 12.22 | 2.7 | 2.4 | 7.98 | 11.80 | 3.4 | 2.4 | 5.45 | 9.44 | 7.2 | 5.5 |
| 32.0 | 9.48 | 13.64 | 1.9 | 1.2 | 9.66 | 12.96 | 2.7 | 1.3 | 7.42 | 11.08 | 6.1 | 4.5 |
| 48.0 | 10.73 | 13.91 | 1.6 | .9 | 10.81 | 13.33 | 2.4 | .9 | 8.89 | 11.58 | 5.5 | 3.9 |
| | DU/DZ | DTM/DZ | BU*100 | RI | DU/DZ | DTM/DZ | BU*100 | RI | DU/DZ | DTM/DZ | BU*100 | RI |
| 4.0 | .3626 | .1843 | .427 | .00 | .3492 | .1403 | .262 | .00 | .3072 | .1971 | 1.276 | .00 |
| 8.0 | .2262 | .1618 | .962 | .00 | .2114 | .1251 | .636 | .00 | .2091 | .1748 | 2.436 | .00 |
| 16.0 | .1411 | .1168 | 1.779 | .00 | .1280 | .0945 | 1.308 | .00 | .1424 | .1303 | 3.898 | .00 |
| 39.2* | .0600 | .0350 | 1.727 | .00 | .0394 | .0344 | 1.667 | .00 | .1356 | .0444 | 3.261 | .00 |

*** OBSERVED DATA**

OBSERVED DATA

| | | | | | | | | | | | | | | | |
|----------------|-----------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------|-------|-------|-------|-------|-------|------|-------|-------|
| | DATE 08/03/77 | TIME 01:00:00 | DATE 08/03/77 | TIME 02:00:00 | DATE 08/03/77 | TIME 03:00:00 | | | | | | | | | |
| | WEATHER | | WEATHER | | WEATHER | | | | | | | | | | |
| | TEMP DEG C | 7.6 | TEMP DEG C | 8.1 | TEMP DEG C | 7.7 | | | | | | | | | |
| | DEW POINT DEG C | -6.6 | DEW POINT DEG C | -9.9 | DEW POINT DEG C | -10.0 | | | | | | | | | |
| | VISIBILITY (MI) | 25 | VISIBILITY (MI) | 25 | VISIBILITY (MI) | 25 | | | | | | | | | |
| CLD (TENTHS) | LOW | 0 MID 6 HI 4 | TOTL 10:LOW 0 MID 8 HI 2 | TOTL 10:LOW 0 MID 8 HI 2 | TOTL 10:LOW 0 MID 8 HI 2 | TOTL 10:LOW 0 MID 8 HI 2 | TOTL 10:LOW 0 MID 8 HI 2 | | | | | | | | |
| CLD HT (M) | LOW | MID 3660 HI 6095 | LOW | MID 3660 HI 6095 | LOW | MID 3660 HI 6095 | LOW | | | | | | | | |
| EXPONENTS | A= | .03 B= .17 P= .25 | A= | -.35 B= -.46 P= .25 | A= | -.35 B= -.46 P= .31 | A= | | | | | | | | |
| NET RADIATION | | -3.63 MW/CM2 | | -4.32 MW/CM2 | | -4.32 MW/CM2 | | | | | | | | | |
| RICHARDSON NO. | (4M) | .07 (8M) .16(16M) .32 | (4M) | .02 (8M) .06(16M) .13 | (4M) | .04 (8M) .09(16M) .17 | (4M) | | | | | | | | |
| | (39.192M) | .18 (OBSERVED DATA): (39.192M) | .11 (OBSERVED DATA): (39.192M) | .13 (OBSERVED DATA): (39.192M) | .13 (OBSERVED DATA): (39.192M) | .13 (OBSERVED DATA): (39.192M) | .17 | | | | | | | | |
| (1/L)*10 | (4M) | .34 (8M) .71 (16M) 1.14 | (4M) | .08 (8M) .14 (16M) .22 | (4M) | .14 (8M) .24 (16M) .39 | (4M) | | | | | | | | |
| USTAR | (4M) | .2421 (8M).2116 (16M).1799 | (4M).4465 (8M).4218 (16M).3923 | (4M).2824 (8M).2738 (16M).2639 | | | | | | | | | | | |
| HEIGHT (M) | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE |
| | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) |
| 1. | | 8.83 | | | | | | 9.80 | | | | | 9.16 | | |
| 2. | 177. | 3.27 | 9.15 | 8.4 | | | 196. | 5.41 | 10.14 | 7.1 | | 195. | 3.53 | 9.50 | 7.7 |
| 4. | | 3.98 | 9.47 | | | | | 6.32 | 10.43 | | | | 4.21 | 9.80 | |
| 8. | 172. | 4.68 | 9.73 | 7.1 | 3.5 | 191. | | 7.29 | 10.61 | 5.2 | 4.0 | 191. | 5.04 | 10.02 | 6.3 |
| 16. | 168. | 5.56 | 10.38 | 8.1 | 3.3 | 183. | | 8.64 | 11.17 | 4.2 | 3.6 | 184. | 6.21 | 10.64 | 4.5 |
| 32. | 176. | 6.45 | 10.70 | 9.4 | 4.0 | 186. | | 10.64 | 11.75 | 3.2 | 2.5 | 187. | 7.89 | 11.22 | 3.7 |
| 48. | 193. | 7.45 | 10.86 | 8.4 | 4.7 | 196. | | 12.17 | 12.06 | 2.2 | 1.7 | 198. | 9.55 | 11.73 | 2.4 |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WS | TEMP | SIGA | SIGE | WS | TEMP | SIGA | SIGE | WS | TEMP | SIGA | SIGE | WS | TEMP | SIGA | SIGE |
|------------|-------|-------|--------|-------|-------|-------|--------|-------|-------|-------|--------|-------|-------|------|-------|-------|
| | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) |
| 1.0 | 2.77 | 9.03 | 7.7 | 2.3 | 4.44 | 10.00 | 10.0 | 11.4 | 2.75 | 9.37 | 11.1 | 11.9 | | | | |
| 2.0 | 3.30 | 9.14 | 7.9 | 2.6 | 5.28 | 10.09 | 7.8 | 8.3 | 3.41 | 9.47 | 8.7 | 8.6 | | | | |
| 4.0 | 3.93 | 9.33 | 8.0 | 2.9 | 6.29 | 10.27 | 6.1 | 6.0 | 4.22 | 9.65 | 6.9 | 6.3 | | | | |
| 8.0 | 4.67 | 9.68 | 8.1 | 3.2 | 7.50 | 10.59 | 4.8 | 4.4 | 5.22 | 9.98 | 5.4 | 4.6 | | | | |
| 16.0 | 5.56 | 10.26 | 8.3 | 3.6 | 8.93 | 11.14 | 3.8 | 3.2 | 6.46 | 10.56 | 4.2 | 3.3 | | | | |
| 32.0 | 6.61 | 10.88 | 8.4 | 4.1 | 10.64 | 11.84 | 3.0 | 2.3 | 8.00 | 11.36 | 3.3 | 2.4 | | | | |
| 48.0 | 7.32 | 10.80 | 8.5 | 4.4 | 11.78 | 12.03 | 2.6 | 1.9 | 9.06 | 11.68 | 2.9 | 2.0 | | | | |
| | DU/DZ | DT/DZ | BU*100 | RI | DU/DZ | DT/DZ | BU*100 | RI | DU/DZ | DT/DZ | BU*100 | RI | | | | |
| 4.0 | .2286 | .1013 | .365 | .00 | .3688 | .0926 | .129 | .00 | .3021 | .0958 | .299 | .00 | | | | |
| 8.0 | .1360 | .0875 | .890 | .00 | .2197 | .0824 | .324 | .00 | .1870 | .0863 | .702 | .00 | | | | |
| 16.0 | .0809 | .0599 | 1.716 | .00 | .1308 | .0621 | .687 | .00 | .1157 | .0675 | 1.430 | .00 | | | | |
| 39.2* | .0625 | .0200 | 2.227 | .00 | .0956 | .0294 | 1.209 | .00 | .1037 | .0419 | 2.969 | .00 | | | | |

* OBSERVED DATA

| | DATE 08/03/77 | TIME 04:00:00 | DATE 08/03/77 | TIME 05:00:00 | DATE 08/03/77 | TIME 06:00:00 | | | | | | | | | | | | |
|----------------|-----------------|---------------|------------------|---------------|-----------------|------------------|-----------|----------|------------------|------------|----------|------------------|----------|------------|------------|-------|-------|-------|
| | WEATHER | | | WEATHER | | | | | | | | | | | | | | |
| | TEMP DEG C | 8.9 | TEMP DEG C | 8.8 | TEMP DEG C | 7.8 | | | | | | | | | | | | |
| | DEW POINT DEG C | -12.0 | DEW POINT DEG C | -12.1 | DEW POINT DEG C | -11.3 | | | | | | | | | | | | |
| | VISIBILITY (MI) | 25 | VISIBILITY (MI) | 25 | VISIBILITY (MI) | 25 | | | | | | | | | | | | |
| CLD (TENTHS) | LOW | 0 | MID | 10 HI | TOTL | 10:LOW | 0 | MID | 10 HI | TOTL | 10: | | | | | | | |
| CLD HT (M) | LOW | 3660 | HI | LOW | 3050 | HI | LOW | 3660 | HI | | | | | | | | | |
| EXPONENTS | A = | -0.12 | B = | .03 | P = | .28 | A = | .06 | B = | .69 | P = | .01 | A = | -0.11 | B = | -.02 | P = | .21 |
| NET RADIATION | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| RICHARDSON NO. | (4M) | .12 | (8M) | .28 | (16M) | .51 | (4M) | .13* | (8M) | ***** | (16M) | ***** | (4M) | .19 | (8M) | .51 | (16M) | 1.25 |
| | (39.192M) | .36 | (OBSERVED DATA): | (39.192M) | 2.85 | (OBSERVED DATA): | (39.192M) | 2.85 | (OBSERVED DATA): | (39.192M) | 2.57 | (OBSERVED DATA): | (4M) | 1.76 | (8M) | 5.51 | (16M) | 15.45 |
| (1/L)*10 | (4M) | .82 | (8M) | 1.77 | (16M) | 2.74 | (4M) | .95* | (8M) | ***** | (16M) | ***** | (4M) | 1.76 | (8M) | 5.51 | (16M) | 15.45 |
| USTAR | (4M) | .1682 | (8M) | .1385 | (16M) | .1175 | (4M) | .157* | (8M) | .0000 | (16M) | .0000 | (4M) | .1872 | (8M) | .1249 | (16M) | .0757 |
| | | | | | | | | | | | | | | | | | | |
| HEIGHT (M) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | | | |
| 1. | | | 7.86 | | | | | 4.92 | | | | | 4.49 | | | | | |
| 2. | 141. | 2.50 | 8.20 | 12.6 | | 57. | 2.40 | 5.18 | 11.5 | | 134. | 3.18 | 4.70 | 9.0 | | | | |
| 4. | | 3.08 | 8.59 | | | | 3.09 | 5.57 | | | | 3.97 | 4.96 | | | | | |
| 8. | 138. | 3.85 | 8.96 | 10.1 | 5.5 | 54. | 3.86 | 6.43 | 8.8 | 1.5 | 130. | 4.92 | 5.37 | 6.4 | 3.1 | | | |
| 16. | 138. | 4.70 | 9.88 | 8.9 | 5.6 | 55. | 3.60 | 6.96 | 8.3 | 2.3 | 132. | 6.23 | 6.88 | 5.0 | 2.4 | | | |
| 32. | 147. | 5.53 | 10.63 | 9.7 | 5.7 | 69. | 2.91 | 7.14 | 11.0 | 4.0 | 147. | 6.33 | 9.54 | 5.9 | 2.2 | | | |
| 48. | 160. | 6.16 | 10.73 | 8.0 | 5.8 | 108. | 2.57 | 7.57 | 15.4 | 5.1 | 165. | 5.88 | 10.32 | 6.7 | 3.3 | | | |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1.0 | 2.09 | 8.03 | 13.4 | 5.1 | 2.95 | 5.17 | 9.1 | .4 | 2.98 | 4.35 | 8.7 | 2.9 |
| 2.0 | 2.54 | 8.17 | 12.3 | 5.2 | 2.97 | 5.30 | 9.5 | .6 | 3.45 | 4.55 | 8.0 | 2.9 |
| 4.0 | 3.09 | 8.45 | 11.3 | 5.3 | 3.00 | 5.55 | 10.0 | .9 | 4.00 | 4.95 | 7.4 | 2.8 |
| 8.0 | 3.77 | 8.96 | 10.4 | 5.5 | 3.02 | 6.01 | 10.4 | 1.5 | 4.63 | 5.71 | 6.9 | 2.8 |
| 16.0 | 4.59 | 9.80 | 9.5 | 5.6 | 3.04 | 6.76 | 10.9 | 2.4 | 5.36 | 7.07 | 6.3 | 2.7 |
| 32.0 | 5.58 | 10.74 | 8.7 | 5.7 | 3.06 | 7.56 | 11.4 | 3.9 | 6.21 | 9.18 | 5.9 | 2.7 |
| 48.0 | 6.26 | 10.69 | 8.3 | 5.8 | 3.08 | 7.42 | 11.7 | 5.1 | 6.76 | 10.45 | 5.6 | 2.7 |
| ----- | | | | | | | | | | | | |
| | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI |
| 4.0 | .2042 | .1419 | .826 | .00 | .0073 | .1293 | .810 | .00 | .1961 | .2031 | .716 | .00 |
| 8.0 | .1243 | .1226 | 1.922 | .00 | .0037 | .1110 | 2.736 | .00 | .1135 | .1869 | 1.960 | .00 |
| 16.0 | .0757 | .0840 | 3.544 | .00 | .0019 | .0744 | 7.208 | .00 | .0657 | .1545 | 4.810 | .00 |
| 39.2* | .0394 | .0162 | 2.550 | .00 | -.0213 | .0369 | 26.030 | .00 | -.0281 | .0587 | 8.320 | .00 |

* OBSERVED DATA

OBSERVED DATA

DATE 08/03/77 TIME 10:00:00 DATE 08/03/77 TIME 11:00:00 DATE 08/03/77 TIME 12:00:00
 WEATHER : WEATHER : WEATHER :
 TEMP DEG C 7.3 TEMP DEG C 8.0 TEMP DEG C 11.1
 DEW POINT DEG C -8.3 DEW POINT DEG C -6.7 DEW POINT DEG C -7.5
 VISIBILITY (MI) 50 VISIBILITY (MI) 85 VISIBILITY (MI) 85
 CLD (TENTHS) : LOW 0 MID 10 HI TOTAL 10:LOW 0 MID 9 HI 1 TOTAL 10:LOW 0 MID 6 HI 2 TOTAL 8:
 CLD HT (M) : LOW MID 2440 HI : LOW MID 2440 HI 6095 : LOW MID 2440 HI 6095
 EXPONENTS : A = -.18 B = -.15 P = .27 : A = -.15 B = -.14 P = .13 : A = -.15 B = .22 P = .12
 NET RADIATION : 6.14 MW/CM2 : 13.74 MW/CM2 : 34.40 MW/CM2
 RICHARDSON NO.: (4M) .10 (8M) .25 (16M) .52 (4M) -.05 (8M) -.13 (10M) -.26 (4M) -.87 (8M) -2.47 (16M) -4.97
 (1/L)*10 : (39.192M) .35 (OBSERVED DATA) : (39.192M) -.10 (OBSERVED DATA) : (39.192M) -2.38 (OBSERVED DATA)
 USTAR : (4M) .67 (8M) 1.53 (16M) 2.84 (4M) -.14 (8M) -.19 (16M) -.18 (4M) -2.34 (8M) -3.26 (16M) -3.26
 (4M) .0913 (8M) .0744 (16M) .0593 (4M) .2913 (8M) .2858 (16M) .2835 (4M) .1005 (8M) .1052 (16M) .1068

| HEIGHT (M) | WD (M/S) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (M/S) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (M/S) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|
| 1. | 46. | 1.39 | 8.41 | 24.5 | | 357. | 3.34 | 9.12 | 8.7 | | 100. | .94 | 10.40 | 41.6 | |
| 2. | | 1.62 | 8.44 | | | | 3.75 | 8.98 | | | | 1.07 | 10.21 | | |
| 4. | | 1.81 | 8.40 | 22.3 | 6.8 | 356. | 4.12 | 8.76 | 7.0 | 6.1 | 88. | 1.09 | 9.95 | 32.0 | 20.0 |
| 8. | 45. | 2.18 | 8.65 | 18.6 | 6.9 | 343. | 4.43 | 8.77 | 5.4 | 5.9 | 64. | 1.19 | 9.99 | 26.5 | 24.6 |
| 16. | 30. | 2.91 | 8.74 | 16.1 | 5.4 | 345. | 4.76 | 8.53 | 5.6 | 5.0 | 51. | 1.27 | 9.82 | 22.2 | 26.2 |
| 32. | 26. | 3.31 | 8.68 | 13.8 | 5.5 | 2. | 5.10 | 8.35 | 5.7 | 4.8 | 64. | 1.43 | 9.55 | 30.2 | 30.9 |
| 48. | 38. | | | | | | | | | | | | | | |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (M/S) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (M/S) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------|----------|------------|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|
| 1.0 | 1.10 | 8.33 | 29.5 | 9.5 | 3.11 | 9.09 | 9.3 | 8.3 | | .87 | 10.38 | 43.7 | 12.7 | |
| 2.0 | 1.32 | 8.36 | 26.1 | 8.6 | 3.40 | 9.06 | 8.4 | 7.5 | | .95 | 10.35 | 39.4 | 14.9 | |
| 4.0 | 1.60 | 8.40 | 23.1 | 7.8 | 3.71 | 9.01 | 7.6 | 6.8 | | 1.03 | 10.29 | 35.6 | 17.3 | |
| 8.0 | 1.93 | 8.49 | 20.4 | 7.0 | 4.05 | 8.91 | 6.9 | 6.2 | | 1.12 | 10.17 | 32.1 | 20.2 | |
| 16.0 | 2.34 | 8.62 | 18.0 | 6.3 | 4.42 | 8.73 | 6.2 | 5.6 | | 1.21 | 9.97 | 29.0 | 23.6 | |
| 32.0 | 2.83 | 8.74 | 15.9 | 5.7 | 4.83 | 8.48 | 5.6 | 5.1 | | 1.31 | 9.70 | 26.2 | 27.6 | |
| 48.0 | 3.16 | 8.68 | 14.8 | 5.4 | 5.09 | 8.37 | 5.3 | 4.8 | | 1.37 | 9.60 | 24.6 | 30.2 | |

| | DU/DZ | DTH/DZ | RU*100 | RI | DU/DZ | DTH/DZ | RU*100 | RI |
|-------|-------|--------|--------|-----|-------|--------|--------|------|
| 4.0 | .1018 | .0312 | .678 | .00 | .1091 | .0160 | -.065 | -.02 |
| 8.0 | .0615 | .0276 | 1.645 | .00 | .0596 | -.0133 | -.180 | -.07 |
| 16.0 | .0372 | .0206 | 3.349 | .00 | .0325 | -.0078 | -.355 | -.26 |
| 39.2* | .0250 | .0063 | 3.496 | .00 | .0212 | -.0013 | -.277 | -.19 |

* OBSERVED DATA

OBSERVED DATA

| : DATE 08/03/77 TIME 13:00:00 : DATE 08/03/77 TIME 14:00:00 : DATE 08/03/77 TIME 15:00:00 : | | | | | | | | | | | | | | | |
|---|------|------|-------|------|------|------|-------|------|------|------|-------|------|------|------|-------|
| : WEATHER : WEATHER : WEATHER : | | | | | | | | | | | | | | | |
| : TEMP DEG C 12.9 : TEMP DEG C 13.5 : TEMP DEG C 14.9 : | | | | | | | | | | | | | | | |
| : DEW POINT DEG C -7.4 : DEW POINT DEG C -5.8 : DEW POINT DEG C -6.6 : | | | | | | | | | | | | | | | |
| : VISIBILITY (MI) 85 : VISIBILITY (MI) 85 : VISIBILITY (MI) 85 : | | | | | | | | | | | | | | | |
| CLD (TENTHS) | :LOW | 0 | MID | 1 | HI | 5 | TOTL | 6 | :LOW | 0 | MID | HI | 4 | TOTL | 4 |
| CLD HT (M) | :LOW | MID | 2440 | HI | 6095 | :LOW | MID | HI | 7620 | :LOW | MID | HI | 7620 | :LOW | HI |
| EXPONENTS | :LOW | MID | 2440 | HI | 6095 | :LOW | MID | HI | 7620 | :LOW | MID | HI | 7620 | :LOW | HI |
| NET RADIATION | :LOW | MID | 2440 | HI | 6095 | :LOW | MID | HI | 7620 | :LOW | MID | HI | 7620 | :LOW | HI |
| RICHARDSON NO. | :LOW | MID | 2440 | HI | 6095 | :LOW | MID | HI | 7620 | :LOW | MID | HI | 7620 | :LOW | HI |
| (1/L)*10 | :LOW | MID | 2440 | HI | 6095 | :LOW | MID | HI | 7620 | :LOW | MID | HI | 7620 | :LOW | HI |
| USTAR | :LOW | MID | 2440 | HI | 6095 | :LOW | MID | HI | 7620 | :LOW | MID | HI | 7620 | :LOW | HI |
| : WS TEMP SIGA SIGE : WS TEMP SIGA SIGE : WS TEMP SIGA SIGE : | | | | | | | | | | | | | | | |
| : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) : | | | | | | | | | | | | | | | |
| HEIGHT (M) | :WS | TEMP | SIGA | SIGE | :WS | TEMP | SIGA | SIGE | :WS | TEMP | SIGA | SIGE | :WS | TEMP | SIGA |
| 1. | :13. | 2.73 | 11.81 | 15.3 | :55. | 2.89 | 12.89 | 19.0 | :47. | 1.82 | 13.28 | 21.1 | :47. | 1.82 | 13.28 |
| 2. | :3. | 2.94 | 11.43 | 14.2 | :45. | 3.18 | 12.54 | 17.4 | :37. | 2.02 | 13.04 | 21.1 | :37. | 2.02 | 13.04 |
| 4. | :13. | 3.18 | 11.04 | 14.0 | :56. | 3.44 | 12.10 | 16.3 | :47. | 2.15 | 12.66 | 19.5 | :47. | 2.15 | 12.66 |
| 8. | :2. | 3.38 | 11.00 | 13.0 | :43. | 3.69 | 12.16 | 16.2 | :30. | 2.36 | 12.79 | 18.0 | :30. | 2.36 | 12.79 |
| 16. | :3. | 3.49 | 10.74 | 11.1 | :40. | 3.92 | 11.86 | 14.7 | :27. | 2.45 | 12.32 | 17.7 | :27. | 2.45 | 12.32 |
| 32. | :19. | 3.50 | 10.50 | 10.6 | :55. | 4.04 | 11.63 | 14.6 | :37. | 2.35 | 12.10 | 33.4 | :37. | 2.35 | 12.10 |
| 48. | | | | | | | | | | | | | | | |

LEAST SQUARES FITTED DATA

| : DATE 08/03/77 TIME 13:00:00 : DATE 08/03/77 TIME 14:00:00 : DATE 08/03/77 TIME 15:00:00 : | | | | | | | | | | | | |
|---|---------|--------|--------|-------|---------|--------|--------|-------|----------|--------|--------|--------|
| : WEATHER : WEATHER : WEATHER : | | | | | | | | | | | | |
| : TEMP DEG C 12.9 : TEMP DEG C 13.5 : TEMP DEG C 14.9 : | | | | | | | | | | | | |
| : DEW POINT DEG C -7.4 : DEW POINT DEG C -5.8 : DEW POINT DEG C -6.6 : | | | | | | | | | | | | |
| : VISIBILITY (MI) 85 : VISIBILITY (MI) 85 : VISIBILITY (MI) 85 : | | | | | | | | | | | | |
| CLD (TENTHS) | :LOW | 0 | MID | 1 | HI | 5 | TOTL | 5 | TOTL | 5 | TOTL | 5 |
| CLD HT (M) | :LOW | 0 | MID | 2440 | HI | 6095 | :LOW | 0 | MID | 2440 | HI | 6095 |
| EXPONENTS | :LOW | 0 | MID | 2440 | HI | 6095 | :LOW | 0 | MID | 2440 | HI | 6095 |
| RICHARDSON NO. | :LOW | 0 | MID | 2440 | HI | 6095 | :LOW | 0 | MID | 2440 | HI | 6095 |
| (1/L)*10 | :LOW | 0 | MID | 2440 | HI | 6095 | :LOW | 0 | MID | 2440 | HI | 6095 |
| USTAR | :LOW | 0 | MID | 2440 | HI | 6095 | :LOW | 0 | MID | 2440 | HI | 6095 |
| : WS TEMP SIGA SIGE : WS TEMP SIGA SIGE : WS TEMP SIGA SIGE : | | | | | | | | | | | | |
| : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) : | | | | | | | | | | | | |
| HEIGHT (M) | : WS | TEMP | SIGA | SIGE | : WS | TEMP | SIGA | SIGE | : WS | TEMP | SIGA | SIGE |
| | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) |
| 1.0 | : 2.63 | 11.78 | 17.0 | 4.5 | : 2.73 | 12.88 | 19.7 | 6.3 | : 1.77 | 13.27 | 18.3 | 13.2 |
| 2.0 | : 2.78 | 11.71 | 15.7 | 5.3 | : 2.94 | 12.81 | 18.6 | 7.2 | : 1.88 | 13.22 | 19.1 | 13.9 |
| 4.0 | : 2.94 | 11.59 | 14.5 | 6.1 | : 3.16 | 12.69 | 17.6 | 8.3 | : 2.00 | 13.13 | 20.0 | 14.6 |
| 8.0 | : 3.11 | 11.36 | 13.4 | 7.1 | : 3.40 | 12.47 | 16.7 | 9.4 | : 2.12 | 12.95 | 20.9 | 15.4 |
| 16.0 | : 3.29 | 10.98 | 12.3 | 8.3 | : 3.65 | 12.10 | 15.8 | 10.7 | : 2.26 | 12.66 | 21.8 | 16.2 |
| 32.0 | : 3.48 | 10.55 | 11.4 | 9.6 | : 3.92 | 11.68 | 14.9 | 12.2 | : 2.40 | 12.26 | 22.7 | 17.1 |
| 48.0 | : 3.60 | 10.58 | 10.9 | 10.5 | : 4.09 | 11.70 | 14.5 | 13.2 | : 2.48 | 12.13 | 23.3 | 17.7 |
| : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : | | | | | | | | | | | | |
| 4.0 | : .0549 | -.0497 | -.315 | -.10 | : .0763 | -.0480 | -.264 | -.07 | : .0404 | -.0341 | -.468 | -.09 |
| 8.0 | : .0290 | -.0409 | -.931 | -.47 | : .0410 | -.0396 | -.753 | -.40 | : .0215 | -.0290 | -1.410 | -.70 |
| 16.0 | : .0154 | -.0235 | -1.910 | -2.16 | : .0220 | -.0226 | -1.491 | -1.98 | : .0114 | -.0188 | -3.235 | -4.94 |
| 39.2* | : .0006 | -.0050 | -2.172 | -2.05 | : .0075 | -.0044 | -1.464 | -2.68 | : -.0062 | -.0038 | -3.419 | -14.12 |

* OBSERVED DATA

[illegible]

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1.0 | 1.42 | 13.22 | 29.7 | 9.7 | 1.69 | 13.38 | 13.3 | 5.5 | 1.22 | 11.48 | 5.8 | .6 |
| 2.0 | 1.53 | 13.18 | 27.7 | 10.4 | 1.83 | 13.34 | 14.0 | 6.6 | 1.48 | 11.55 | 5.2 | .7 |
| 4.0 | 1.64 | 13.11 | 25.8 | 11.1 | 1.99 | 13.28 | 14.8 | 7.8 | 1.80 | 11.68 | 4.7 | .9 |
| 8.0 | 1.77 | 12.98 | 24.1 | 11.9 | 2.16 | 13.16 | 15.7 | 9.2 | 2.19 | 11.91 | 4.2 | 1.1 |
| 16.0 | 1.90 | 12.75 | 22.4 | 12.8 | 2.34 | 12.95 | 16.6 | 10.8 | 2.66 | 12.25 | 3.8 | 1.3 |
| 32.0 | 2.04 | 12.42 | 20.9 | 13.7 | 2.54 | 12.66 | 17.5 | 12.8 | 3.23 | 12.45 | 3.4 | 1.7 |
| 48.0 | 2.13 | 12.29 | 20.0 | 14.3 | 2.67 | 12.55 | 18.1 | 14.1 | 3.62 | 12.01 | 3.2 | 1.9 |
| | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | FI | DU/DZ | DTH/DZ | BU*100 | FI |
| 4.0 | .0395 | -.0241 | -.488 | -.14 | .0544 | -.0208 | -.288 | -.06 | .1177 | .0705 | 1.195 | .00 |
| 8.0 | .0212 | -.0204 | -1.433 | -1.00 | .0295 | -.0174 | -.820 | -.51 | .0715 | .0579 | 2.656 | .00 |
| 16.0 | .0114 | -.0131 | -3.185 | -5.85 | .0160 | -.0106 | -1.702 | -2.85 | .0434 | .0326 | 4.054 | .00 |
| 39.2* | .0081 | -.0081 | -10.010 | -108.15 | .0087 | -.0050 | -3.917 | -22.01 | .0106 | -.0050 | -2.549 | -11.14 |

A-86

OBSERVED DATA

| | | | | |
|-----------------|---------------|-----------------|---------------|--------------------------|
| DATE 08/03/77 | TIME 19:00:00 | DATE 08/03/77 | TIME 20:00:00 | |
| WEATHER | | WEATHER | | |
| TEMP DEG C | 9.1 | TEMP DEG C | 3.3 | |
| DEW POINT DEG C | -3.9 | DEW POINT DEG C | -4.2 | |
| VISIBILITY (MI) | 50 | VISIBILITY (MI) | 25 | |
| CLD (TENTHS) | LOW | CLD (TENTHS) | LOW | 2 |
| CLD HT (M) | LOW | CLD HT (M) | LOW | 7620 |
| EXPCNENTS | A = -0.30 | EXPCNENTS | A = -0.61 | B = -0.36 |
| NET RADIATION | -9.42 | NET RADIATION | -9.07 | MW/CM2 |
| RICHARDSN NO. | (4M) | RICHARDSN NO. | (4M) | .26 (8M) |
| (1/L)*10 | (39.192M) | (1/L)*10 | (39.192M) | 1.18 (OBSERVED DATA) |
| USTAR | (4M) 5.80 | USTAR | (4M) 3.12 | (8M) 2.89 (16M) 2.19 |
| | (4M) 1.005 | | (4M) 0.0505 | (8M) 0.0646 (16M) 0.0877 |
| HEIGHT (M) | WD | WS | TEMP | SIGA |
| | (DEG) | (M/S) | (C) | (DEG) |
| 1. | | 6.82 | | 2.17 |
| 2. | 136. | 2.01 | 7.43 | 4.4 |
| 4. | 124. | 2.97 | 8.83 | 2.5 |
| 8. | 130. | 4.34 | 11.24 | 1.0 |
| 16. | 125. | 4.53 | 11.92 | .9 |
| 32. | 126. | 4.76 | 11.98 | 1.6 |
| 48. | 133. | 4.90 | 11.85 | 1.5 |
| | | | | .8 |
| | | | | 153. |
| | | | | 6.54 |
| | | | | 11.00 |
| | | | | 2.1 |
| | | | | 1.2 |

LEAST SQUARES FITTED DATA

| | | | | | | | | |
|------------|-------|--------|--------|-------|-------|--------|--------|-------|
| HEIGHT (M) | WS | TEMP | SIGA | SIGE | WS | TEMP | SIGA | SIGE |
| | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) |
| 1.0 | 2.00 | 7.58 | 3.5 | .2 | .47 | 2.07 | 23.2 | 5.9 |
| 2.0 | 2.40 | 7.93 | 2.8 | .2 | .76 | 2.38 | 15.2 | 4.6 |
| 4.0 | 2.88 | 8.60 | 2.3 | .3 | 1.23 | 2.98 | 10.0 | 3.6 |
| 8.0 | 3.46 | 9.81 | 1.9 | .3 | 1.98 | 4.12 | 6.6 | 2.8 |
| 16.0 | 4.15 | 11.65 | 1.5 | .4 | 3.20 | 6.16 | 4.3 | 2.2 |
| 32.0 | 4.98 | 13.06 | 1.2 | .5 | 5.16 | 9.29 | 2.8 | 1.7 |
| 48.0 | 5.54 | 11.44 | 1.1 | .6 | 6.82 | 11.14 | 2.2 | 1.5 |
| | | | | | | | | |
| | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI |
| 4.0 | .1764 | .3232 | 2.169 | .00 | .2035 | .2997 | 11.248 | .00 |
| 8.0 | .1059 | .2640 | 4.896 | .00 | .1641 | .2749 | 15.803 | .00 |
| 16.0 | .0635 | .1455 | 7.442 | .00 | .1323 | .2253 | 19.773 | .00 |
| 39.2* | .0087 | .0019 | .426 | .00 | .0519 | .0919 | 13.185 | .00 |

* OBSERVED DATA

OBSERVED DATA

| | DATE 09/03/77 | TIME 10:00:00 | DATE 09/03/77 | TIME 11:00:00 | DATE 09/03/77 | TIME 12:00:00 |
|-----------------|--------------------------------|---------------|-----------------|----------------------------------|---------------|-----------------|
| WEATHER | | | | | | |
| TEMP DEG C | 9.4 | | TEMP DEG C | 12.2 | | TEMP DEG C |
| DEW POINT DEG C | -8.9 | | DEW POINT DEG C | -7.8 | | TEMP DEG C |
| VISIBILITY (MI) | 85 | | VISIBILITY (MI) | 85 | | VISIBILITY (MI) |
| CLD (TENTHS) | TOTL 8 | | CLD (TENTHS) | TOTL 6 | | CLD (TENTHS) |
| CLD HT (M) | LOW 6 MID 7 HI 3648 HI 7512 | | CLD HT (M) | LOW 3 MID 3 HI 3658 HI 7512 | | CLD HT (M) |
| EXPONENTS | A = -.21 B = -.10 P = .15 | | EXPONENTS | A = -.13 B = .21 P = .08 | | EXPONENTS |
| NET RADIATION | 25.33 MW/CM2 | | NET RADIATION | 36.21 MW/CM2 | | NET RADIATION |
| RICHARDSON NO. | (4M) -.04 (8M) -.12 (16M) -.22 | | RICHARDSON NO. | (4M) -.27 (8M) -.79 (16M) -1.58 | | RICHARDSON NO. |
| (1/L)*10 | (39.192M) -.15 (OBSERVED DATA) | | (1/L)*10 | (39.192M) -8.80 (OBSERVED DATA) | | (1/L)*10 |
| USTAR | (4M) -.13 (8M) -.17 (16M) -.15 | | USTAR | (4M) -.75 (8M) -1.06 (16M) -1.04 | | USTAR |
| | (4M).3643 (8M).3616 (16M).3628 | | | (4M).4282 (8M).4261 (16M).4186 | | |

| HEIGHT (M) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|
| 1. | | | 10.17 | | | | | 13.82 | | | | | 16.33 | | |
| 2. | 145. | 4.07 | 10.08 | 9.4 | | 162. | 4.48 | 13.52 | 10.5 | | 187. | 3.10 | 15.99 | 31.0 | |
| 4. | | 4.70 | 9.89 | | | | 5.04 | 13.04 | | | | 3.48 | 15.53 | | |
| 8. | 138. | 5.36 | 9.61 | 7.5 | 5.1: 155. | | 5.49 | 12.58 | 8.5 | 5.0: 180. | | 3.78 | 14.99 | 30.8 | 12.1: |
| 16. | 131. | 5.77 | 9.52 | 6.3 | 4.8: 148. | | 5.76 | 12.41 | 6.9 | 5.0: 173. | | 4.19 | 14.96 | 29.5 | 12.3: |
| 32. | 129. | 6.24 | 9.27 | 5.3 | 4.6: 147. | | 5.85 | 12.14 | 6.7 | 6.0: 173. | | 4.60 | 14.63 | 31.2 | 12.4: |
| 48. | 138. | 6.62 | 9.07 | 4.9 | 4.2: 158. | | 5.90 | 11.94 | 7.6 | 7.3: 184. | | 4.73 | 14.43 | 29.1 | 13.6: |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|
| 1.0 | | 3.79 | 10.07 | 11.1 | 6.3 | | 4.43 | 13.51 | 10.9 | 3.0 | | 2.86 | 15.99 | 31.4 | 10.7 |
| 2.0 | | 4.20 | 10.03 | 9.6 | 5.9 | | 4.69 | 13.42 | 10.0 | 3.5 | | 3.14 | 15.90 | 31.1 | 11.1 |
| 4.0 | | 4.65 | 9.94 | 8.3 | 5.5 | | 4.97 | 13.25 | 9.2 | 4.0 | | 3.44 | 15.73 | 30.8 | 11.5 |
| 8.0 | | 5.15 | 9.78 | 7.2 | 5.1 | | 5.26 | 12.93 | 8.4 | 4.7 | | 3.78 | 15.41 | 30.5 | 11.9 |
| 16.0 | | 5.71 | 9.51 | 6.2 | 4.8 | | 5.57 | 12.42 | 7.7 | 5.4 | | 4.15 | 14.91 | 30.2 | 12.4 |
| 32.0 | | 6.32 | 9.17 | 5.4 | 4.4 | | 5.91 | 11.89 | 7.1 | 6.3 | | 4.56 | 14.39 | 30.0 | 12.9 |
| 48.0 | | 6.71 | 9.11 | 5.0 | 4.3 | | 6.11 | 12.04 | 6.7 | 6.8 | | 4.81 | 14.53 | 29.8 | 13.2 |
| | DU/DZ | OTH/DZ | BU*100 | RI | | DU/DZ | OTH/DZ | BU*100 | RI | | DU/DZ | OTH/DZ | BU*100 | RI | |
| 4.0 | | .1590 | -.0310 | -.079 | -.04 | | .0956 | -.0721 | -.160 | -.05 | | .1071 | -.0707 | -.323 | -.10 |
| 8.0 | | .0880 | -.0257 | -.215 | -.12 | | .0507 | -.0591 | -.468 | -.21 | | .0588 | -.0580 | -.881 | -.57 |
| 16.0 | | .0488 | -.0152 | -.414 | -.22 | | .0268 | -.0331 | -.935 | -.79 | | .0323 | -.0325 | -1.644 | -2.65 |
| 39.2* | | .0238 | -.0025 | -.324 | -.31 | | .0031 | -.0025 | -.383 | -.20 | | .0081 | -.0025 | -.603 | -.64 |

* OBSERVED DATA

OBSERVED DATA

| | DATE 09/03/77 | TIME 13:00:00 | DATE 09/03/77 | TIME 14:00:00 | DATE 09/03/77 | TIME 15:00:00 |
|----------------|---|--------------------------------|--------------------------------|---------------------------|---------------------------|-----------------|
| | WEATHER | | WEATHER | | WEATHER | |
| | TEMP DEG C 16.1 | | TEMP DEG C 16.7 | | TEMP DEG C 15.6 | |
| | DEW POINT DEG C -8.9 | | DEW POINT DEG C -8.9 | | DEW POINT DEG C -8.9 | |
| | VISIBILITY (MI) 50 | | VISIBILITY (MI) 50 | | VISIBILITY (MI) 30 | |
| CLD (TENTHS) | LOW MID 6 HI 7 TOTL 8 | LOW 1 MID 7 HI 10 TOTL 10 | LOW 7 MID 7 HI 10 TOTL 10 | LOW 7 MID 7 HI 10 TOTL 10 | LOW 7 MID 7 HI 10 TOTL 10 | |
| CLD HT (M) | MID 4572 HI 7620 | MID 4572 HI 7620 | MID 4572 HI 7620 | MID 4572 HI 7620 | MID 4572 HI 7620 | |
| EXPONENTS | A = -.06 B = .27 P = .10 | A = .00 B = .01 P = .18 | A = -.12 B = -.08 P = .15 | | | |
| NET RADIATION | 43.27 MW/CM2 | 9.07 MW/CM2 | 21.70 MW/CM2 | | | |
| RICHARDSON NO. | (4M) -.15 (8M) -.43 (16M) -.80 | (4M) -.01 (8M) -.04 (16M) -.08 | (4M) -.06 (8M) -.16 (16M) -.31 | | | |
| | (39.192M) .95 (OBSERVED DATA) | (39.192M) -.17 (OBSERVED DATA) | (39.192M) -.22 (OBSERVED DATA) | | | |
| (1/L)*10 | (4M) -.43 (8M) -.58 (16M) -.54 | (4M) -.05 (8M) -.06 (16M) -.06 | (4M) -.18 (8M) -.22 (16M) -.21 | | | |
| USTAR | (4M).4570 (8M).4529 (16M).4456 | (4M).3404 (8M).3400 (16M).3462 | (4M).3506 (8M).3512 (16M).3554 | | | |
| HEIGHT (M) | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | | | | | |
| | (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) : | | | | | |
| 1. | 17.32 | 15.72 | 17.20 | | | |
| 2. | 230. | 5.04 17.28 15.1 | 314. | 3.65 15.76 11.3 | 303. | 3.76 17.12 14.2 |
| 4. | | 5.56 16.79 | | 4.78 15.65 | | 4.64 16.93 |
| 8. | | 6.05 16.06 14.6 | 7.4: 308. | 5.18 15.20 11.3 | 4.5: 299. | 5.09 16.32 12.4 |
| 16. | | 6.45 16.04 13.7 | 8.7: 297. | 5.68 15.40 11.6 | 4.3: 288. | 5.63 16.41 11.7 |
| 32. | | 6.83 15.69 12.7 | 9.5: 294. | 6.28 15.15 11.4 | 4.2: 285. | 5.87 16.10 10.2 |
| 48. | | 7.03 15.60 12.5 | 12.7: 306. | 6.90 14.87 11.3 | 4.6: 297. | 6.42 15.82 9.9 |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WD | WS | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD | WS | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD | WS | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|-------|--------|----------|------------|------------|-------|--------|----------|------------|------------|-------|--------|----------|------------|------------|
| 1.0 | | 4.79 | 17.16 | 16.1 | 4.1 | | 3.46 | 15.68 | 11.3 | 4.3 | | 3.59 | 17.08 | 15.6 | 6.4 |
| 2.0 | | 5.14 | 17.06 | 15.4 | 4.9 | | 3.92 | 15.65 | 11.3 | 4.3 | | 3.99 | 17.02 | 14.4 | 6.1 |
| 4.0 | | 5.52 | 16.87 | 14.8 | 6.0 | | 4.44 | 15.60 | 11.3 | 4.4 | | 4.43 | 16.91 | 13.3 | 5.8 |
| 8.0 | | 5.93 | 16.53 | 14.1 | 7.2 | | 5.03 | 15.51 | 11.4 | 4.4 | | 4.93 | 16.70 | 12.2 | 5.4 |
| 16.0 | | 6.37 | 15.99 | 13.5 | 8.7 | | 5.69 | 15.33 | 11.4 | 4.4 | | 5.48 | 16.36 | 11.3 | 5.2 |
| 32.0 | | 6.85 | 15.47 | 12.9 | 10.5 | | 6.45 | 15.07 | 11.4 | 4.4 | | 6.09 | 15.94 | 10.4 | 4.9 |
| 48.0 | | 7.14 | 15.69 | 12.6 | 11.7 | | 6.93 | 14.91 | 11.4 | 4.4 | | 6.48 | 15.88 | 10.0 | 4.7 |
| | DU/DZ | DTH/DZ | BU*100 | RI | | DU/DZ | DTH/DZ | BU*100 | RI | | DU/DZ | DTH/DZ | BU*100 | RI | |
| 4.0 | | .1320 | -.0782 | -.138 | -.01 | | .1846 | -.0148 | -.041 | -.01 | | .1569 | -.0425 | -.117 | -.06 |
| 8.0 | | .0709 | -.0636 | -.391 | -.21 | | .1046 | -.0126 | -.109 | -.04 | | .0872 | -.0356 | -.317 | -.16 |
| 16.0 | | .0381 | -.0344 | -.735 | -.80 | | .0592 | -.0084 | -.225 | -.08 | | .0485 | -.0216 | -.625 | -.62 |
| 39.2* | | .0125 | .0044 | .476 | .00 | | .0388 | -.0075 | -.911 | -2.17 | | .0344 | -.0075 | -1.043 | -3.15 |

* OBSERVED DATA

OBSERVED DATA

| | | | | | |
|--|--|--|---------------|---------------|---------------|
| DATE 09/03/77 | TIME 16:00:00 | DATE 09/03/77 | TIME 17:00:00 | DATE 10/03/77 | TIME 11:00:00 |
| WEATHER RW W/N | WEATHER BN | WEATHER LGT SNOW | | | |
| TEMP DEG C 15.6 | TEMP DEG C 6.7 | TEMP DEG C 1.1 | | | |
| DEW POINT DEG C -8.3 | DEW POINT DEG C -0.6 | DEW POINT DEG C -8.3 | | | |
| VISIBILITY (MI) 20 | VISIBILITY (MI) 1/8 | VISIBILITY (MI) 1.5 | | | |
| CLD (TENTHS) : LOW 7 MID 10 HI | TOTL 10 : LOW 10 MID HI | TOTL 10 : LOW 7 MID HI | | | |
| CLD HT (M) : LOW 1829 MID 3048 HI | LOW 30 MID HI | LOW 1524 MID HI | | | |
| EXPONENTS : A = -.07 B = -.10 P = .16 | A = -.17 B = -.12 P = .15 | A = -.15 B = -.12 P = .11 | | | |
| NET RADIATION : MW/CM2 | MW/CM2 | MW/CM2 | | | |
| RICHARDSON NO. : (4M) .01 (8M) .02 (16M) .04 | (4M) -.00 (8M) -.01 (16M) -.01 | (4M) -.02 (8M) -.05 (16M) -.11 | | | |
| (L/L)*10 : (39.192M) -.10 (OBSERVED DATA) : (39.192M) -.02 (OBSERVED DATA) : | (4M) -.01 (8M) -.01 (16M) -.01 | (4M) -.05 (8M) -.07 (16M) -.08 | | | |
| USTAR : (4M) .4497 (8M) .4304 (16M) .4154 | (4M) .9230 (8M) .8961 (16M) .8866 | (4M) 1.091 (8M) 1.044 (16M) 1.018 | | | |
| HEIGHT (M) : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | WD (DEG) (M/S) (C) (DEG) (DEG) (DEG) (M/S) (C) (DEG) (DEG) (DEG) : | WD (DEG) (M/S) (C) (DEG) (DEG) (DEG) (M/S) (C) (DEG) (DEG) (DEG) : | | | |
| 1. : 14.78 | 5.31 | 1.79 | | | |
| 2. : 274. : 5.41 14.90 13.0 | 322. : 10.35 5.33 6.7 | 345. : 12.55 1.59 7.6 | | | |
| 4. : 266. : 5.89 14.89 11.4 | 311. : 12.68 5.28 5.5 | 336. : 14.50 1.38 6.6 | | | |
| 8. : 273. : 6.79 14.57 11.1 | 4.9 : 320. 14.03 5.02 5.1 | 4.3 : 346. 15.91 1.21 6.1 | | | |
| 16. : 261. : 7.54 14.90 10.3 | 4.0 : 307. 15.69 5.06 4.5 | 3.7 : 333. 17.70 .66 5.3 | | | |
| 32. : 260. : 8.32 14.73 10.3 | 3.9 : 304. 15.88 4.80 4.0 | 3.5 : 329. 16.66 .24 5.2 | | | |
| 48. : 272. : 14.50 10.5 4.1 : 318. | 4.57 3.8 | -.05 4.6 3.7 : | | | |

LEAST SQUARES FITTED DATA

| | | | | | |
|--|--|--|--|--|--|
| HEIGHT (M) : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | WD (DEG) (M/S) (C) (DEG) (DEG) (DEG) (M/S) (C) (DEG) (DEG) (DEG) : | WD (DEG) (M/S) (C) (DEG) (DEG) (DEG) (M/S) (C) (DEG) (DEG) (DEG) : | | | |
| 1.0 : 4.81 14.80 12.9 5.7 | 9.84 5.30 7.3 5.4 | 12.20 1.68 8.2 5.8 | | | |
| 2.0 : 5.37 14.81 12.3 5.4 | 10.95 5.28 6.5 5.0 | 13.17 1.61 7.5 5.3 | | | |
| 4.0 : 6.00 14.81 11.8 5.0 | 12.19 5.24 5.7 4.6 | 14.22 1.46 6.7 4.9 | | | |
| 8.0 : 6.71 14.82 11.3 4.6 | 13.56 5.16 5.1 4.2 | 15.36 1.20 6.1 4.5 | | | |
| 16.0 : 7.49 14.81 10.8 4.3 | 15.09 5.02 4.5 3.8 | 16.58 .74 5.5 4.1 | | | |
| 32.0 : 8.37 14.71 10.3 4.0 | 16.80 4.77 4.0 3.5 | 17.90 .15 5.0 3.8 | | | |
| 48.0 : 8.93 14.51 10.0 3.9 | 17.88 4.58 3.8 3.3 | 18.72 -.02 4.7 3.6 | | | |
| DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : | DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : | DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : | | | |
| 4.0 : .2222 .0115 .017 .00 | .4351 -.0098 -.004 -.00 | .3635 -.0587 -.017 -.02 | | | |
| 8.0 : .1241 .0096 .046 .00 | .2421 -.0087 -.011 -.01 | .1962 -.0504 -.049 -.05 | | | |
| 16.0 : .0693 .0056 .087 .00 | .1347 -.0064 -.025 -.01 | .1059 -.0337 -.112 -.11 | | | |
| 39.2* : .0382 -.0044 -.310 -.20 | .1249 -.0044 -.084 -.01 | .1286 -.0081 -.145 -.04 | | | |

* OBSERVED DATA

OBSERVED DATA

```

: DATE 10/03/77 TIME 12:00:00 :
: WEATHER BD :
: TEMP DEG C 2.2 :
: DEW POINT DEG C -8.3 :
: VISIBILITY (MI) 1.5 :
CLD (TENTHS) : LOW 10 MID HI TOTL 10 :
CLD HT (M) : LOW 1220 MID HI :
EXPONENTS : A= -.05 B= -.05 P= .12 :
NET RADIATION : 32.66 MW/CM2 :
RICHARDSON NO.: (4M) -.02 (8M) -.06 (16M) -.14 :
: (39.192M) -.05 (OBSERVED DATA):
(1/L)*10 : (4M) -.07 (8M) -.09 (16M) -.10 :
USTAR : (4M).8932 (8M).8642 (16M).8519:

```

```

: WD WS TEMP SIGA SIGE :
HEIGHT (M) : (DEG) (M/S) (C) (DEG) (DEG):
-----
1. : 3.19 :
2. : 349. 10.25 2.93 9.4 :
4. : 340. 11.78 2.61 9.2 :
8. : 350. 13.04 2.34 8.4 4.7:
16. : 337. 14.12 1.89 7.9 4.2:
32. : 333. 14.36 1.49 8.3 4.0:
48. : 350. 1.18 8.0 4.4:
-----

```

LEAST SQUARES FITTED DATA

```

: WS TEMP SIGA SIGE :
HEIGHT (M) : (M/S) (C) (DEG) (DEG) :
-----
1.0 : 9.76 3.00 9.7 5.0 :
2.0 : 10.63 2.91 9.3 4.8 :
4.0 : 11.58 2.75 9.0 4.7 :
8.0 : 12.61 2.45 8.7 4.5 :
16.0 : 13.74 1.95 8.3 4.4 :
32.0 : 14.97 1.33 8.0 4.2 :
48.0 : 15.74 1.24 7.9 4.1 :
-----
: DU/DZ DTH/DZ BU*100 RI :
-----
4.0 : .3306 -.0668 -.028 -.02 :
8.0 : .1801 -.0567 -.081 -.06 :
16.0 : .0981 -.0365 -.176 -.14 :
39.2* : .0859 -.0094 -.229 -.19 :
-----

```

* OBSERVED DATA

OBSERVED DATA

[illegible]

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1.0 | 3.54 | .70 | 9.6 | 4.6 | 4.99 | 2.39 | 11.7 | 4.9 | 5.37 | 3.73 | 11.2 | 3.6 |
| 2.0 | 3.88 | .62 | 8.8 | 4.8 | 5.43 | 2.29 | 11.0 | 5.2 | 5.79 | 3.63 | 10.5 | 4.0 |
| 4.0 | 4.26 | .49 | 8.1 | 5.0 | 5.90 | 2.10 | 10.4 | 5.5 | 6.25 | 3.44 | 9.9 | 4.5 |
| 8.0 | 4.67 | .24 | 7.4 | 5.2 | 6.42 | 1.75 | 9.8 | 5.8 | 7.74 | 3.09 | 9.3 | 4.9 |
| 16.0 | 5.13 | -.18 | 6.8 | 5.4 | 6.99 | 1.18 | 9.3 | 6.2 | 7.28 | 2.53 | 8.7 | 5.5 |
| 32.0 | 5.62 | -.67 | 6.3 | 5.6 | 7.60 | .56 | 8.8 | 6.5 | 7.85 | 1.92 | 8.2 | 6.1 |
| 48.0 | 5.94 | -.71 | 5.9 | 5.8 | 7.98 | .64 | 8.5 | 6.8 | 8.21 | 2.02 | 7.9 | 6.5 |
| | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI |
| 4.0 | .1316 | -.0543 | -.171 | -.06 | .1656 | -.0837 | -.132 | -.05 | .1586 | -.0799 | -.116 | -.06 |
| 8.0 | .0722 | -.0454 | -.477 | -.31 | .0901 | -.0670 | -.371 | -.15 | .0856 | -.0662 | -.330 | -.16 |
| 16.0 | .0396 | -.0277 | -.970 | -1.27 | .0490 | -.0396 | -.742 | -.59 | .0462 | -.0388 | -.666 | -.65 |
| 39.2* | .0259 | -.0025 | -.424 | -.51 | .0344 | -.0050 | -.466 | -.59 | .0343 | -.0081 | -.711 | -1.45 |

* OBSERVED DATA

OBSERVED DATA

| | | DATE 11/03/77 TIME 13:00:00 | | | | DATE 11/03/77 TIME 14:00:00 | | | | DATE 11/03/77 TIME 15:00:00 | | | |
|----------------|--|---------------------------------|-------|---------------------------------|--------|---------------------------------|-------|---------------------------|--------|-----------------------------|-------|------|--------|
| | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | | |
| | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | | |
| | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | | |
| | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | | |
| CLD (TENTHS) | | LOW | MID | HI | 0 TOTL | LOW | MID | HI | 0 TOTL | LOW | MID | HI | 1 TOTL |
| CLD HT (M) | | LOW | MID | HI | | LOW | MID | HI | | LOW | MID | HI | 7620 |
| EXPONENTS | | A = .02 B = .26 P = .10 | | A = -.01 B = .16 P = .11 | | A = -.13 B = -.01 P = .12 | | A = -.13 B = -.01 P = .12 | | | | | |
| NET RADIATION | | 40.26 MW/CM2 | | 35.94 MW/CM2 | | 27.21 MW/CM2 | | | | | | | |
| RICHARDSON NO. | | (4M) -.16 (8M) -.47(16M) -.96 | | (4M) -.09 (8M) -.26(16M) -.52 | | (4M) -.07 (8M) -.18(16M) -.38 | | | | | | | |
| | | (39.192M) -.26 (OBSERVED DATA): | | (39.192M) -.16 (OBSERVED DATA): | | (39.192M) -.21 (OBSERVED DATA): | | | | | | | |
| (1/L)*10 | | (4M) -.46 (8M) -.64 (16M) -.64 | | (4M) -.27 (8M) -.36 (16M) -.35 | | (4M) -.20 (8M) -.26 (16M) -.26 | | | | | | | |
| USTAR | | (4M).4885 (8M).4845 (16M).4797 | | (4M).5673 (8M).5594 (16M).5549 | | (4M).5761 (8M).5670 (16M).5641 | | | | | | | |
| | | WS | | WS | | WS | | WS | | WS | | | |
| HEIGHT (M) | | WD | TEMP | SIGA | SIGE | WD | TEMP | SIGA | SIGE | WD | TEMP | SIGA | SIGE |
| | | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (C) | (DEG) |
| 1. | | 347. | 5.37 | 5.04 | 11.3 | 354. | 6.37 | 5.88 | 9.7 | 358. | 6.60 | 6.29 | 9.9 |
| 2. | | 338. | 5.99 | 4.57 | 11.3 | 345. | 7.16 | 5.37 | 9.5 | 348. | 7.33 | 5.89 | 9.3 |
| 4. | | 340. | 6.35 | 4.03 | 11.3 | 6.0 | 7.75 | 4.85 | 10.0 | 5.1 | 7.91 | 5.42 | 8.4 |
| 8. | | 336. | 6.81 | 3.79 | 10.2 | 6.7 | 8.32 | 4.59 | 9.4 | 5.1 | 8.63 | 5.16 | 7.3 |
| 16. | | 335. | 7.11 | 3.43 | 11.7 | 8.4 | 8.75 | 4.20 | 9.4 | 6.0 | 9.25 | 4.74 | 6.6 |
| 32. | | 348. | | 3.19 | 12.5 | 9.5 | 352. | 3.94 | 9.6 | 6.8 | 357. | 4.47 | 6.9 |
| 48. | | | | | | | | | | | | | 5.1 |

LEAST SQUARES FITTED DATA

| | | DATE 11/03/77 TIME 13:00:00 | | | | DATE 11/03/77 TIME 14:00:00 | | | | DATE 11/03/77 TIME 15:00:00 | | | |
|----------------|--|---------------------------------|-------|---------------------------------|--------|---------------------------------|-------|---------------------------|--------|-----------------------------|-------|--------|--------|
| | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | | |
| | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | | |
| | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | | |
| | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | | |
| CLD (TENTHS) | | LOW | MID | HI | 0 TOTL | LOW | MID | HI | 0 TOTL | LOW | MID | HI | 1 TOTL |
| CLD HT (M) | | LOW | MID | HI | | LOW | MID | HI | | LOW | MID | HI | 7620 |
| EXPONENTS | | A = .02 B = .26 P = .10 | | A = -.01 B = .16 P = .11 | | A = -.13 B = -.01 P = .12 | | A = -.13 B = -.01 P = .12 | | | | | |
| NET RADIATION | | 40.26 MW/CM2 | | 35.94 MW/CM2 | | 27.21 MW/CM2 | | | | | | | |
| RICHARDSON NO. | | (4M) -.16 (8M) -.47(16M) -.96 | | (4M) -.09 (8M) -.26(16M) -.52 | | (4M) -.07 (8M) -.18(16M) -.38 | | | | | | | |
| | | (39.192M) -.26 (OBSERVED DATA): | | (39.192M) -.16 (OBSERVED DATA): | | (39.192M) -.21 (OBSERVED DATA): | | | | | | | |
| (1/L)*10 | | (4M) -.46 (8M) -.64 (16M) -.64 | | (4M) -.27 (8M) -.36 (16M) -.35 | | (4M) -.20 (8M) -.26 (16M) -.26 | | | | | | | |
| USTAR | | (4M).4885 (8M).4845 (16M).4797 | | (4M).5673 (8M).5594 (16M).5549 | | (4M).5761 (8M).5670 (16M).5641 | | | | | | | |
| | | WS | | WS | | WS | | WS | | WS | | | |
| HEIGHT (M) | | WD | TEMP | SIGA | SIGE | WD | TEMP | SIGA | SIGE | WD | TEMP | SIGA | SIGE |
| | | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (C) | (DEG) |
| 1.0 | | 5.12 | 5.06 | 10.9 | 3.4 | 6.02 | 5.90 | 9.7 | 3.5 | 6.13 | 6.33 | 10.9 | 5.1 |
| 2.0 | | 5.48 | 4.96 | 11.0 | 4.1 | 6.51 | 5.80 | 9.7 | 3.9 | 6.67 | 6.23 | 9.9 | 5.0 |
| 4.0 | | 5.88 | 4.76 | 11.1 | 4.9 | 7.05 | 5.59 | 9.7 | 4.4 | 7.25 | 6.05 | 9.1 | 5.0 |
| 8.0 | | 6.30 | 4.39 | 11.3 | 5.9 | 7.62 | 5.21 | 9.6 | 4.9 | 7.89 | 5.71 | 8.3 | 5.0 |
| 16.0 | | 6.75 | 3.80 | 11.4 | 7.0 | 8.25 | 4.60 | 9.6 | 5.4 | 8.58 | 5.16 | 7.6 | 5.0 |
| 32.0 | | 7.23 | 3.17 | 11.6 | 8.4 | 8.92 | 3.94 | 9.6 | 6.1 | 9.33 | 4.54 | 6.9 | 5.0 |
| 48.0 | | 7.52 | 3.29 | 11.7 | 9.3 | 9.34 | 4.04 | 9.5 | 6.5 | 9.80 | 4.55 | 6.5 | 5.0 |
| | | DU/DZ | | DTH/DZ | | DU/DZ | | DTH/DZ | | DU/DZ | | DTH/DZ | |
| | | BU*100 | | RI | | BU*100 | | RI | | BU*100 | | RI | |
| 4.0 | | .1352 -.0845 | | -.138 | | .1846 -.0876 | | -.099 | | .2030 -.0765 | | -.082 | |
| 8.0 | | .0724 -.0699 | | -.399 | | .0998 -.0727 | | -.282 | | .1104 -.0640 | | -.231 | |
| 16.0 | | .0388 -.0408 | | -.812 | | .0540 -.0430 | | -.571 | | .0600 -.0390 | | -.478 | |
| 39.2* | | .0259 -.0050 | | -.511 | | .0367 -.0062 | | -.418 | | .0342 -.0069 | | -.413 | |

* OBSERVED DATA

[illegible]

| HEIGHT (M) : | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|--------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1.0 | 4.90 | -1.09 | 11.0 | 3.7 | 3.41 | -0.08 | 13.9 | 5.3 | 3.05 | .61 | 16.6 | 6.9 |
| 2.0 | 5.26 | -1.16 | 10.2 | 4.2 | 3.67 | -0.15 | 13.0 | 5.7 | 3.29 | .53 | 15.4 | 7.6 |
| 4.0 | 5.64 | -1.28 | 9.4 | 4.9 | 3.96 | -0.29 | 12.1 | 6.2 | 3.55 | .40 | 14.2 | 8.3 |
| 8.0 | 6.05 | -1.50 | 8.7 | 5.6 | 4.27 | -0.56 | 11.3 | 6.8 | 3.84 | .14 | 13.2 | 9.2 |
| 16.0 | 6.50 | -1.88 | 8.1 | 6.4 | 4.61 | -1.00 | 10.5 | 7.4 | 4.14 | -.29 | 12.2 | 10.1 |
| 32.0 | 6.97 | -2.36 | 7.5 | 7.3 | 4.97 | -1.52 | 9.8 | 8.0 | 4.47 | -.80 | 11.3 | 11.1 |
| 48.0 | 7.26 | -2.48 | 7.1 | 7.9 | 5.19 | -1.56 | 9.4 | 8.4 | 4.67 | -.86 | 10.8 | 11.7 |
| | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI |
| 4.0 | .1328 | -.0476 | -.086 | -.01 | .0997 | -.0577 | -.211 | -.03 | .0907 | -.0556 | -.253 | -.04 |
| 8.0 | .0712 | -.0404 | -.255 | -.14 | .0537 | -.0484 | -.610 | -.30 | .0489 | -.0468 | -.730 | -.35 |
| 16.0 | .0382 | -.0260 | -.570 | -.32 | .0290 | -.0299 | -1.298 | -1.68 | .0264 | -.0291 | -1.561 | -2.24 |
| 39.2* | .0265 | -.0088 | -.984 | -2.42 | .0183 | -.0019 | -.410 | -.41 | .0128 | -.0075 | -1.992 | -6.57 |

A-94

| DATE 14/03/77 | | TIME 13:00:00 | | DATE 14/03/77 | | TIME 14:00:00 | | DATE 14/03/77 | | TIME 15:00:00 | |
|--|-------|-----------------|-------|---|-------|-----------------|-------|---|-------|-----------------|-------|
| WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | |
| TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | |
| DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | |
| VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | |
| LOW | 3 MID | HI | TOTAL | LOW | 3 MID | HI | TOTAL | LOW | 4 MID | HI | TOTAL |
| CLD (TENTHS) | | | | CLD (TENTHS) | | | | CLD (TENTHS) | | | |
| CLD HT (M) | | | | CLD HT (M) | | | | CLD HT (M) | | | |
| EXPONENTS | | | | EXPONENTS | | | | EXPONENTS | | | |
| A = -.13 B = .20 P = .09 | | | | A = -.13 B = .19 P = .08 | | | | A = -.08 B = .17 P = .11 | | | |
| 42.78 MW/CM2 | | | | 36.63 MW/CM2 | | | | 29.03 MW/CM2 | | | |
| NET RADIATION | | | | NET RADIATION | | | | NET RADIATION | | | |
| RICHARDSON NO. | | | | RICHARDSON NO. | | | | RICHARDSON NO. | | | |
| (1/L)*10 | | | | (1/L)*10 | | | | (1/L)*10 | | | |
| USTAR | | | | USTAR | | | | USTAR | | | |
| (4M) -.34 (8M) -1.02 (16M) -2.32 : (4M) -.49 (8M) -1.46 (16M) -3.04 : (4M) -.22 (8M) -.65 (16M) -1.43 : | | | | (4M) -.34 (8M) -1.02 (16M) -2.32 : (4M) -.49 (8M) -1.46 (16M) -3.04 : (4M) -.22 (8M) -.65 (16M) -1.43 : | | | | (4M) -.34 (8M) -1.02 (16M) -2.32 : (4M) -.49 (8M) -1.46 (16M) -3.04 : (4M) -.22 (8M) -.65 (16M) -1.43 : | | | |
| (39.192M) -2.23 (OBSERVED DATA) : (39.192M) -1.53 : (4M) -1.36 (16M) -1.53 : (4M) -.93 (8M) -1.36 (16M) -1.53 : (4M) -.93 (8M) -1.36 (16M) -1.53 : | | | | (39.192M) -2.23 (OBSERVED DATA) : (39.192M) -1.53 : (4M) -1.36 (16M) -1.53 : (4M) -.93 (8M) -1.36 (16M) -1.53 : | | | | (39.192M) -2.23 (OBSERVED DATA) : (39.192M) -1.53 : (4M) -1.36 (16M) -1.53 : (4M) -.93 (8M) -1.36 (16M) -1.53 : | | | |
| (4M) -.93 (8M) -1.36 (16M) -1.53 : (4M) -.93 (8M) -1.36 (16M) -1.53 : (4M) -.93 (8M) -1.36 (16M) -1.53 : | | | | (4M) -.93 (8M) -1.36 (16M) -1.53 : (4M) -.93 (8M) -1.36 (16M) -1.53 : (4M) -.93 (8M) -1.36 (16M) -1.53 : | | | | (4M) -.93 (8M) -1.36 (16M) -1.53 : (4M) -.93 (8M) -1.36 (16M) -1.53 : | | | |
| (4M) -.2900 (8M) .2927 (16M) .2947 : (4M) .2930 (8M) .2961 (16M) .2932 : (4M) .3209 (8M) .3228 (16M) .3249 : | | | | (4M) -.2900 (8M) .2927 (16M) .2947 : (4M) .2930 (8M) .2961 (16M) .2932 : (4M) .3209 (8M) .3228 (16M) .3249 : | | | | (4M) -.2900 (8M) .2927 (16M) .2947 : (4M) .2930 (8M) .2961 (16M) .2932 : (4M) .3209 (8M) .3228 (16M) .3249 : | | | |
| WS (M/S) | | | | WS (M/S) | | | | WS (M/S) | | | |
| (C) | | | | (C) | | | | (C) | | | |
| SIGA (DEG) | | | | SIGA (DEG) | | | | SIGA (DEG) | | | |
| (DEG) | | | | (DEG) | | | | (DEG) | | | |
| HEIGHT (M) | | | | HEIGHT (M) | | | | HEIGHT (M) | | | |
| 1. 1.64 | | | | 2.34 | | | | 3.09 | | | |
| 2. 3.09 1.45 31.9 | | | | 2.98 2.06 23.5 | | | | 3.47 2.76 19.4 | | | |
| 3. 326. 3.32 31.4 | | | | 3.27 1.29 23.4 | | | | 3.81 1.87 18.7 | | | |
| 4. 327. 3.49 1.31 31.6 | | | | 3.42 1.71 23.5 | | | | 4.11 2.38 19.4 | | | |
| 8. 324. 3.74 .54 27.8 | | | | 3.61 1.17 20.0 | | | | 4.36 1.81 18.0 | | | |
| 16. 327. 3.99 .28 23.1 | | | | 3.73 .97 16.3 | | | | 4.69 1.45 15.6 | | | |
| 32. 327. .04 22.1 | | | | .77 16.5 | | | | 1.19 15.5 | | | |
| 48. 340. 13.8: 348. | | | | 14.1: 20. | | | | 1.19 15.5 11.7: | | | |

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1.0 | 2.91 | 1.42 | 37.3 | 6.4 | 2.88 | 2.02 | 27.8 | 6.5 | 3.26 | 2.72 | 21.2 | 6.0 |
| 2.0 | 3.10 | 1.36 | 34.2 | 7.4 | 3.04 | 1.96 | 25.3 | 7.4 | 3.51 | 2.65 | 20.1 | 6.8 |
| 4.0 | 3.30 | 1.25 | 31.3 | 8.5 | 3.21 | 1.83 | 23.1 | 8.5 | 3.78 | 2.51 | 19.1 | 7.6 |
| 8.0 | 3.51 | 1.03 | 28.7 | 9.7 | 3.39 | 1.61 | 21.1 | 9.7 | 4.07 | 2.26 | 18.1 | 8.5 |
| 16.0 | 3.74 | .66 | 26.3 | 11.1 | 3.58 | 1.24 | 19.3 | 11.0 | 4.38 | 1.84 | 17.2 | 9.6 |
| 32.0 | 3.98 | .19 | 24.1 | 12.7 | 3.78 | .82 | 17.6 | 12.6 | 4.71 | 1.33 | 16.3 | 10.7 |
| 48.0 | 4.13 | .07 | 22.9 | 13.8 | 3.91 | .83 | 16.7 | 13.6 | 4.92 | 1.24 | 15.8 | 11.5 |
| | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI |
| 4.0 | .0693 | -.0457 | -.240 | -.08 | .0587 | -.0477 | -.264 | -.08 | .0929 | -.0544 | -.217 | -.02 |
| 8.0 | .0369 | -.0388 | -.719 | -.28 | .0310 | -.0394 | -.781 | -.39 | .0500 | -.0459 | -.633 | -.33 |
| 16.0 | .0197 | -.0250 | -1.638 | -1.98 | .0164 | -.0228 | -1.626 | -1.52 | .0269 | -.0290 | -1.383 | -1.80 |
| 39.2* | .0090 | -.0050 | -1.675 | -4.46 | .0111 | -.0025 | -.946 | -1.93 | .0144 | -.0062 | -1.492 | -4.34 |

A-95

/ OBSERVED DATA

: DATE 14/03/77 TIME 17:00:00 : DATE 14/03/77 TIME 18:00:00 : DATE 14/03/77 TIME 19:00:00 :
 : WEATHER : WEATHER : WEATHER :
 : TEMP DEG C 4.7 : TEMP DEG C 2.8 : TEMP DEG C 1.1 :
 : DEW POINT DEG C -14.5 : DEW POINT DEG C -15.5 : DEW POINT DEG C -13.9 :
 : VISIBILITY (MI) 70 : VISIBILITY (MI) 50 : VISIBILITY (MI) 50 :
 : CLD (TENTHS) :LOW 2 MID HI TOTAL 2:LOW 3 MID HI TOTAL 3:LOW 3 MID HI TOTAL 3 :
 : CLD HT (M) :LOW 1220 MID HI :LOW 1524 MID HI :LOW 1524 MID HI :
 : EXPONENTS : A = -.08 B = .22 P = .10 : A = -.21 B = .02 P = .09 : A = -.03 B = .39 P = .06 :
 : NET RADIATION : 3.98 MW/CM2 : -7.26 MW/CM2 : -9.77 MW/CM2 :
 : RICHARDSON NO.: (4M) -.45 (8M)-1.34(16M)-3.10 : (4M) -.32 (8M) -.98(16M)-2.44 : (4M) .06 (8M) -.13(16M)-3.13 :
 : (1/L)*10 : (39.192M)-4.70 (OBSERVED DATA): (39.192M)-1.93 (OBSERVED DATA): (39.192M)**** (OBSERVED DATA):
 : USTAR : (4M)-1.23 (8M)-1.78 (16M)-2.04: (4M) -.88 (8M)-1.31 (16M)-1.61: (4M) .30 (8M) -.19 (16M)-2.06:
 : : (4M).1796 (8M).1842 (16M).1882: (4M).2244 (8M).2267 (16M).2307: (4M).0865 (8M).0945 (16M).1147:

: WS TEMP SIGA SIGE : WS TEMP SIGA SIGE : WS TEMP SIGA SIGE :
 : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) :
 : HEIGHT (M) : (DEG) (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) :
 : 1. : 3.00 : 3.10 : 2.40 :
 : 2. : 49. : 1.83 : 2.70 : 26.8 : 31. : 2.36 : 2.91 : 14.8 : 78. : 1.20 : 2.38 : 13.0 :
 : 4. : 43. : 2.01 : 2.14 : 24.2 : 23. : 2.60 : 2.24 : 13.4 : 68. : 1.33 : 2.03 : 12.7 :
 : 8. : 48. : 2.15 : 2.64 : 23.3 : 25. : 2.77 : 2.72 : 12.6 : 72. : 1.35 : 2.32 : 13.0 :
 : 16. : 39. : 2.28 : 2.13 : 21.0 : 20. : 2.96 : 2.35 : 7.8 : 65. : 1.39 : 2.18 : 13.5 :
 : 32. : 40. : 2.46 : 1.89 : 18.8 : 22. : 3.02 : 2.04 : 7.3 : 67. : 1.44 : 1.96 : 12.4 :
 : 48. : 60. : 1.63 : 22.5 : 23.5 : 37. : 1.76 : 9.5 : 10.3 : 83. : 1.71 : 11.5 : 18.8 :

LEAST SQUARES FITTED DATA

: WS TEMP SIGA SIGE : WS TEMP SIGA SIGE : WS TEMP SIGA SIGE :
 : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) :
 : HEIGHT (M) : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) :
 : 1.0 : 1.72 : 2.73 : 27.3 : 9.0 : 2.27 : 2.85 : 17.1 : 9.6 : 1.18 : 2.31 : 13.5 : 3.8 :
 : 2.0 : 1.85 : 2.68 : 25.9 : 10.4 : 2.41 : 2.81 : 14.8 : 9.7 : 1.23 : 2.30 : 13.2 : 5.0 :
 : 4.0 : 1.99 : 2.60 : 24.5 : 12.1 : 2.57 : 2.74 : 12.9 : 9.8 : 1.29 : 2.28 : 13.0 : 6.6 :
 : 8.0 : 2.13 : 2.45 : 23.2 : 14.1 : 2.73 : 2.60 : 11.2 : 9.9 : 1.34 : 2.25 : 12.8 : 8.6 :
 : 16.0 : 2.29 : 2.19 : 21.9 : 16.4 : 2.91 : 2.35 : 9.7 : 10.0 : 1.40 : 2.16 : 12.5 : 11.3 :
 : 32.0 : 2.46 : 1.82 : 20.7 : 19.0 : 3.09 : 1.98 : 8.4 : 10.2 : 1.45 : 1.96 : 12.3 : 14.8 :
 : 48.0 : 2.57 : 1.66 : 20.1 : 20.8 : 3.21 : 1.79 : 7.7 : 10.2 : 1.49 : 1.71 : 12.1 : 17.3 :
 : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI :
 : 4.0 : .0476 : -.0287 : -.414 : -.12 : .0533 : -.0256 : -.221 : -.08 : .0175 : .0005 : .019 : .00 :
 : 8.0 : .0256 : -.0246 : -1.230 : -.81 : .0284 : -.0223 : -.679 : -.24 : .0091 : -.0003 : -.038 : -.02 :
 : 16.0 : .0137 : -.0164 : -2.844 : -5.00 : .0151 : -.0156 : -1.686 : -2.04 : .0048 : -.0020 : -.930 : -.67 :
 : 39.2* : .0069 : -.0063 : -5.433 : -30.11 : .0118 : -.0075 : -4.258 : -28.16 : .0031 : -.0056 : -14.405 : -82.95 :

* OBSERVED DATA

OBSERVED DATA

| : DATE 14/03/77 TIME 20:00:00 : DATE 14/03/77 TIME 21:00:00 : DATE 14/03/77 TIME 22:00:00 : | | | | | | | | | | | | | | | | | | |
|---|-----------------------|---------------------------|----------------------|---------------------------|----------------------|---------------------------|----------------------|---------------------------|----------------------|-------|----------------------|-------|----------------------|-------|----------------------|-------|----------------------|-------|
| : WEATHER : | | : WEATHER : | | : WEATHER : | | : WEATHER : | | : WEATHER : | | | | | | | | | | |
| : TEMP DEG C -0.9 : | | : TEMP DEG C -6.1 : | | : TEMP DEG C -6.1 : | | : TEMP DEG C -6.1 : | | : TEMP DEG C -6.1 : | | | | | | | | | | |
| : DEW POINT DEG C -14.4 : | | : DEW POINT DEG C -16.1 : | | : DEW POINT DEG C -16.1 : | | : DEW POINT DEG C -16.1 : | | : DEW POINT DEG C -15.6 : | | | | | | | | | | |
| : VISIBILITY (MI) 25 : | | : VISIBILITY (MI) 25 : | | : VISIBILITY (MI) 25 : | | : VISIBILITY (MI) 25 : | | : VISIBILITY (MI) 25 : | | | | | | | | | | |
| CLD (TENTHS) :LOW | MID | HI | TOTL | 0 | :LOW | MID | HI | TOTL | 0 | | | | | | | | | |
| CLD HT (M) :LOW | MID | HI | | | :LOW | MID | HI | | | | | | | | | | | |
| EXPONENTS :A= | -0.05 | B= | .37 | P= | .26 | :A= | .56 | B= | -.30 | | | | | | | | | |
| NET RADIATION | -9.07 MW/CM2 | | -8.72 MW/CM2 | | -8.72 MW/CM2 | | -7.95 MW/CM2 | | | | | | | | | | | |
| RICHARDSON NO.: | (4M) | .40 | (8M) | .90 | (16M) | 1.39 | (4M) | .36 | (8M) | .50 | (16M) | .50 | (4M) | .31 | (8M) | .59 | (16M) | .94 |
| (1/L)*10 | -.02 (OBSERVED DATA): | | .01 (OBSERVED DATA): | | .37 (OBSERVED DATA): | | .37 (OBSERVED DATA): | | .37 (OBSERVED DATA): | | .37 (OBSERVED DATA): | | .37 (OBSERVED DATA): | | .37 (OBSERVED DATA): | | .37 (OBSERVED DATA): | |
| USTAR | (4M) | 6.88 | (8M) | 16.45 | (16M) | 19.07 | (4M) | 5.62 | (8M) | 5.32 | (16M) | 2.64 | (4M) | 4.49 | (8M) | 7.37 | (16M) | 8.84 |
| | (4M) | .0645 | (8M) | .0435 | (16M) | .0365 | (4M) | .0363 | (8M) | .0434 | (16M) | .0632 | (4M) | .0577 | (8M) | .0518 | (16M) | .0497 |
| : WS TEMP SIGA SIGE : WS TEMP SIGA SIGE : WS TEMP SIGA SIGE : | | | | | | | | | | | | | | | | | | |
| HEIGHT (M) : (DEG) | (M/S) | (C) | (DEG) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (DEG) |
| 1. | 72. | 1.40 | -1.05 | 4.8 | 76. | .61 | -1.55 | .1 | 171. | 1.03 | -5.80 | 4.4 | | | | | | |
| 2. | 68. | 2.20 | 1.34 | 3.2 | 52. | 1.12 | .23 | 6.0 | 162. | 1.59 | -5.31 | 3.9 | | | | | | |
| 4. | 73. | 2.63 | .81 | 2.2 | .5 | 1.63 | -.41 | 4.5 | .9 | 154. | -4.00 | 6.2 | | | | | | |
| 8. | 66. | 2.93 | 1.65 | 3.6 | .5 | 2.88 | 1.50 | 2.7 | .7 | 131. | -4.68 | 4.6 | | | | | | 1.4 |
| 16. | 66. | 2.97 | 1.63 | 3.1 | .6 | 3.20 | 1.66 | 3.0 | .4 | 112. | -1.97 | 3.0 | | | | | | .8 |
| 32. | 66. | | 1.45 | 3.6 | .9 | 59. | 1.56 | 2.7 | .6 | 108. | -.94 | 3.5 | | | | | | .6 |
| 48. | 81. | | | | | | | | | | .02 | | | | | | | .6 |

LEAST SQUARES FITTED DATA

| : WS TEMP SIGA SIGE : WS TEMP SIGA SIGE : WS TEMP SIGA SIGE : | | | | | | | | | | | | |
|---|-------|--------|-------|--------|-------|-------|--------|--------|-------|-------|--------|--------|
| HEIGHT (M) : | (M/S) | (C) | (DEG) | SIGE : | (M/S) | (C) | (DEG) | SIGE : | (M/S) | (C) | (DEG) | SIGE : |
| 1.0 | 1.37 | -.33 | 3.7 | .2 | .44 | -1.75 | .5 | 1.5 | .82 | -5.48 | 5.2 | 3.5 |
| 2.0 | 1.64 | -.17 | 3.6 | .2 | .68 | -1.50 | .8 | 1.2 | 1.12 | -5.25 | 4.9 | 2.5 |
| 4.0 | 1.96 | .14 | 3.5 | .3 | 1.04 | -1.03 | 1.2 | 1.0 | 1.53 | -4.79 | 4.5 | 1.8 |
| 8.0 | 2.34 | .69 | 3.4 | .4 | 1.59 | -.19 | 1.8 | .8 | 2.10 | -3.95 | 4.3 | 1.3 |
| 16.0 | 2.80 | 1.52 | 3.3 | .5 | 2.44 | 1.12 | 2.6 | .7 | 2.86 | -2.51 | 4.0 | .9 |
| 32.0 | 3.35 | 2.10 | 3.2 | .7 | 3.73 | 2.24 | 3.8 | .5 | 3.91 | -.63 | 3.7 | .7 |
| 48.0 | 3.72 | 1.26 | 3.1 | .8 | 4.79 | 1.35 | 4.8 | .5 | 4.70 | -.07 | 3.6 | .5 |
| : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : | | | | | | | | | | | | |
| 4.0 | .1175 | .1526 | 2.283 | .00 | .1522 | .2286 | 12.162 | .00 | .1622 | .2264 | 5.626 | .00 |
| 8.0 | .0703 | .1247 | 5.208 | .00 | .1165 | .1894 | 17.146 | .00 | .1108 | .2004 | 10.636 | .00 |
| 16.0 | .0420 | .0690 | 8.028 | .00 | .0892 | .1111 | 17.082 | .00 | .0757 | .1484 | 16.788 | .00 |
| 39.2* | .0469 | -.0013 | -.626 | -1.26 | .0994 | .0037 | 1.340 | .00 | .0828 | .0700 | 24.572 | .00 |

* OBSERVED DATA

* OBSERVED DATA

OBSERVED DATA

| DATE 14/03/77 TIME 23:00:00 : DATE 15/03/77 TIME 00:00:00 : DATE 15/03/77 TIME 01:00:00 : | | | | | | | | | | | | | | | |
|---|---------------------------|----------------------|-------------|----------------------|---------------------------|----------------------|-------------|---------------------|---------------------------|-----------------------------|-----------------|-----------------------------|----------|------------|------------|
| | | WEATHER | | | WEATHER | | | WEATHER | | | WEATHER | | | | |
| | | TEMP DEG C | | | TEMP DEG C | | | TEMP DEG C | | | TEMP DEG C | | | | |
| | | DEW POINT DEG C | | | DEW POINT DEG C | | | DEW POINT DEG C | | | DEW POINT DEG C | | | | |
| | | VISIBILITY (MI) | | | VISIBILITY (MI) | | | VISIBILITY (MI) | | | VISIBILITY (MI) | | | | |
| CLD (TENTHS) | LOW | MID | HI | 5 TOTL | LOW | MID | HI | 7 TOTL | LOW | MID | HI | 6 TOTL | | | |
| CLD HT (M) | LOW | MID | HI | 7620 | LOW | MID | HI | 7620 | LOW | MID | HI | 7620 | | | |
| EXPONENTS | A = -.17 B = -.24 P = .35 | | | | A = -.37 B = -.96 P = .52 | | | | A = -.31 B = -.21 P = .42 | | | | | | |
| NET RADIATION | -7.26 MW/CM2 | | | | -7.26 MW/CM2 | | | | -7.26 MW/CM2 | | | | | | |
| RICHARDSON NO. | (4M) | .10 (8M) | .22 (16M) | .44 | (4M) | .11 (8M) | .19 (16M) | .32 | (4M) | .38 (8M) | .71 (16M) | 1.02 | | | |
| | (39.192M) | 1.15 (OBSERVED DATA) | (39.192M) | 1.78 (OBSERVED DATA) | (39.192M) | 1.78 (OBSERVED DATA) | (39.192M) | .16 (OBSERVED DATA) | (39.192M) | 1.14 | (4M) | 6.26 (8M) 10.35 (16M) 10.40 | | | |
| (1/L)*10 | (4M) | .59 (8M) | 1.15 (16M) | 2.13 | (4M) | .70 (8M) | .94 (16M) | 1.14 | (4M) | 6.26 (8M) 10.35 (16M) 10.40 | (4M) | 6.26 (8M) 10.35 (16M) 10.40 | | | |
| USTAR | (4M) | .1507 (8M) | .1367 (16M) | .1196 | (4M) | .0897 (8M) | .0993 (16M) | .1074 | (4M) | .0518 (8M) | .0449 (16M) | .0451 | | | |
| ----- | | | | | | | | | | | | | | | |
| HEIGHT (M) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
| 1. | | | -4.68 | | | | | -5.86 | | | | | -6.99 | | |
| 2. | 144. | 2.05 | -4.39 | 8.8 | | 132. | 1.12 | -5.56 | 8.9 | | 104. | 1.11 | -6.69 | 7.4 | |
| 4. | 132. | 2.66 | -3.31 | 8.4 | | 117. | 1.71 | -4.35 | 8.7 | | 98. | 1.57 | -4.07 | 5.4 | |
| 8. | 127. | 3.41 | -3.98 | 7.8 | | 107. | 2.30 | -5.04 | 7.1 | | 2.3 | 106. | -5.93 | 4.3 | 1.9 |
| 16. | 117. | 4.18 | -2.52 | 6.6 | | 97. | 2.86 | -3.85 | 5.4 | | 3.6 | 109. | -2.65 | -3.06 | 4.8 |
| 32. | 104. | 5.58 | -1.66 | 5.4 | | 91. | 5.28 | -2.96 | 3.5 | | 1.1 | 106. | -2.23 | 2.3 | 1.2 |
| 48. | 108. | | -.63 | 5.6 | | 2.1 | 98. | -1.96 | 3.0 | | .4 | 112. | -2.26 | 2.9 | 1.5 |

A-98

LEAST SQUARES FITTED DATA

| DATE 14/03/77 TIME 23:00:00 : DATE 15/03/77 TIME 00:00:00 : DATE 15/03/77 TIME 01:00:00 : | | | | | | | | | | | | | | | |
|---|----------|-----------|------------|-----------------|----------|-----------|------------|-----------------|----------|-----------|------------|-----------------|--|-------|--|
| WEATHER : | | WEATHER : | | WEATHER : | | WEATHER : | | WEATHER : | | WEATHER : | | WEATHER : | | | |
| TEMP DEG C | | -4.4 | | TEMP DEG C | | -3.3 | | TEMP DEG C | | -11.2 | | TEMP DEG C | | -5.5 | |
| DEW POINT DEG C | | -11.7 | | DEW POINT DEG C | | -11.2 | | DEW POINT DEG C | | -11.2 | | DEW POINT DEG C | | -12.8 | |
| VISIBILITY (MI) | | 20 | | VISIBILITY (MI) | | 20 | | VISIBILITY (MI) | | 20 | | VISIBILITY (MI) | | 20 | |
| CLD (TENTHS) | | LOW | | CLD (TENTHS) | | LOW | | CLD (TENTHS) | | LOW | | CLD (TENTHS) | | LOW | |
| CLD HT (M) | | HI | | CLD HT (M) | | HI | | CLD HT (M) | | HI | | CLD HT (M) | | HI | |
| EXPONENTS | | 5 | | EXPONENTS | | 5 | | EXPONENTS | | 5 | | EXPONENTS | | 5 | |
| NET RADIATION : | | HI | | NET RADIATION : | | HI | | NET RADIATION : | | HI | | NET RADIATION : | | HI | |
| RICHARDSON NO. | | 7620 | | RICHARDSON NO. | | 7620 | | RICHARDSON NO. | | 7620 | | RICHARDSON NO. | | 7620 | |
| (1/L)*10 | | LOW | | (1/L)*10 | | LOW | | (1/L)*10 | | LOW | | (1/L)*10 | | LOW | |
| USTAR | | HI | | USTAR | | HI | | USTAR | | HI | | USTAR | | HI | |
| A = -0.17 B = -0.24 P = .35 : A = -0.37 B = -0.96 P = .52 : A = -0.31 B = -0.21 P = .42 : | | | | | | | | | | | | | | | |
| -7.26 MW/CM2 : -7.26 MW/CM2 : -7.26 MW/CM2 : | | | | | | | | | | | | | | | |
| (4M) .10 (8M) .22 (16M) .44 : (4M) .11 (8M) .19 (16M) .32 : (4M) .38 (8M) .71 (16M) 1.02 : | | | | | | | | | | | | | | | |
| (39.192M) 1.15 (OBSERVED DATA) : (39.192M) 1.78 (OBSERVED DATA) : (39.192M) .16 (OBSERVED DATA) : | | | | | | | | | | | | | | | |
| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | | | |
| 1.0 | 1.61 | -4.38 | 10.3 | 6.7 | .78 | -5.49 | 13.5 | 26.1 | .85 | -6.50 | 8.8 | 3.0 | | | |
| 2.0 | 2.06 | -4.26 | 9.2 | 5.7 | 1.12 | -5.38 | 10.5 | 13.4 | 1.14 | -6.25 | 7.1 | 2.6 | | | |
| 4.0 | 2.64 | -4.02 | 8.2 | 4.8 | 1.61 | -5.16 | 8.1 | 6.9 | 1.53 | -5.77 | 5.7 | 2.2 | | | |
| 8.0 | 3.37 | -3.57 | 7.3 | 4.0 | 2.32 | -4.74 | 6.2 | 3.6 | 2.05 | -4.89 | 4.6 | 1.9 | | | |
| 16.0 | 4.31 | -2.76 | 6.5 | 3.4 | 3.32 | -3.99 | 4.8 | 1.8 | 2.75 | -3.48 | 3.7 | 1.7 | | | |
| 32.0 | 5.50 | -1.48 | 5.8 | 2.9 | 4.77 | -2.79 | 3.7 | .9 | 3.69 | -2.00 | 3.0 | 1.4 | | | |
| 48.0 | 6.35 | -.69 | 5.4 | 2.6 | 5.89 | -2.02 | 3.2 | .6 | 4.38 | -2.33 | 2.7 | 1.3 | | | |
| HEIGHT (M) | DU/DZ | DTM/DZ | BU*100 | RI | DU/DZ | DTM/DZ | BU*100 | RI | DU/DZ | DTM/DZ | BU*100 | RI | | | |
| 4.0 | .2178 | .1250 | 1.049 | .00 | .1986 | .1160 | 2.608 | .00 | .1517 | .2365 | 5.919 | .00 | | | |
| 8.0 | .1392 | .1157 | 2.372 | .00 | .1426 | .1077 | 4.696 | .00 | .1017 | .2012 | 11.169 | .00 | | | |
| 16.0 | .0890 | .0970 | 4.854 | .00 | .1023 | .0912 | 7.698 | .00 | .0682 | .1305 | 16.041 | .00 | | | |
| 39.2* | .0483 | .0744 | 11.715 | .00 | .0384 | .0725 | 13.060 | .00 | .0424 | .0081 | 2.814 | .00 | | | |

* OBSERVED DATA

* OBSERVED DATA

OBSERVED DATA

| | | | | | | | | | | | | | | | | | | | | |
|-----------------|-----------------|---------------|------------------|---------------|-----------------|------------------|-----------|----------|------------------|-----------|-------|------------------|-----------|-------|------------------|-----------|-------|------------------|------|------|
| | DATE 15/03/77 | TIME 02:00:00 | DATE 15/03/77 | TIME 03:00:00 | DATE 15/03/77 | TIME 04:00:00 | | | | | | | | | | | | | | |
| | WEATHER | | WEATHER | | WEATHER | | | | | | | | | | | | | | | |
| | TEMP DEG C | -5.5 | TEMP DEG C | -5.0 | TEMP DEG C | -5.5 | | | | | | | | | | | | | | |
| | DEW POINT DEG C | -13.3 | DEW POINT DEG C | -12.8 | DEW POINT DEG C | -12.8 | | | | | | | | | | | | | | |
| | VISIBILITY (MI) | 20 | VISIBILITY (MI) | 20 | VISIBILITY (MI) | 20 | | | | | | | | | | | | | | |
| CLD (TENTHS) | LOW | HI | 9 TOTL | 9:LOW | HI | 9 TOTL | 7 | | | | | | | | | | | | | |
| CLD HT (M) | LOW | MID | HI | 6095 | LOW | MID | HI | | | | | | | | | | | | | |
| EXPONENTS | A = | -0.32 | B = | -0.12 | P = | .47 | A = | -0.01 | B = | .37 | P = | .40 | | | | | | | | |
| NET RADIATION | | -5.09 | MW/CM2 | | -7.26 | MW/CM2 | | | -7.26 | MW/CM2 | | | | | | | | | | |
| RICHARDSON NO.: | (4M) | .16 | (8M) | .30 | (16M) | .48 | (4M) | .17 | (8M) | .35 | (16M) | .72 | (4M) | .20 | (8M) | .41 | (16M) | .71 | | |
| | (39.192M) | .88 | (OBSERVED DATA): | (39.192M) | 9.37 | (OBSERVED DATA): | (39.192M) | .50 | (OBSERVED DATA): | (39.192M) | .50 | (OBSERVED DATA): | (39.192M) | .50 | (OBSERVED DATA): | (39.192M) | .50 | (OBSERVED DATA): | | |
| (L/L)*10 | (4M) | 1.41 | (8M) | 2.11 | (16M) | 2.49 | (4M) | 1.55 | (8M) | 2.79 | (16M) | 5.27 | (4M) | 2.05 | (8M) | 3.70 | (16M) | 5.15 | | |
| USTAR | (4M) | 1.070 | (8M) | 1.062 | (16M) | 1.091 | (4M) | 0.639 | (8M) | 0.602 | (16M) | 0.526 | (4M) | 0.949 | (8M) | 0.833 | (16M) | 0.758 | | |
| HEIGHT (M) | WD | WS | TEMP (C) | SIGA | SIGE | WD | WS | TEMP (C) | SIGA | SIGE | WD | WS | TEMP (C) | SIGA | SIGE | WD | WS | TEMP (C) | SIGA | SIGE |
| | | | -8.90 | | | | | -7.87 | | | | | -6.53 | | | | | -6.53 | | |
| 1. | | | -8.59 | 4.5 | | | | -7.37 | 35.3 | | | | -6.27 | 5.2 | | | | -6.27 | 5.2 | |
| 2. | 177. | 1.54 | -8.59 | 4.5 | | 148. | .98 | -7.37 | 35.3 | | 72. | 1.50 | -6.27 | 5.2 | | | | -6.27 | 5.2 | |
| 4. | 167. | 2.32 | -6.44 | 3.6 | | 136. | 1.38 | -6.49 | 29.5 | | 65. | 2.11 | -4.50 | 3.6 | | | | -4.50 | 3.6 | |
| 8. | 153. | 2.73 | -7.48 | 3.8 | .7 | 130. | 1.64 | -6.78 | 20.7 | 4.3 | 75. | 2.99 | -5.55 | 3.2 | 1.1 | | | -5.55 | 3.2 | 1.1 |
| 16. | 139. | 3.99 | -4.96 | 5.5 | .9 | 113. | 2.30 | -6.00 | 12.1 | 4.2 | 91. | 3.33 | -3.57 | 5.7 | 2.8 | | | -3.57 | 5.7 | 2.8 |
| 32. | 131. | 6.00 | -3.05 | 2.3 | .6 | 112. | 3.93 | -4.86 | 7.6 | 1.7 | 111. | 4.82 | -1.53 | 3.4 | 1.9 | | | -1.53 | 3.4 | 1.9 |
| 48. | 142. | -1.93 | 1.2 | .6 | .6 | 132. | -3.25 | 6.4 | | .9 | 127. | -1.14 | 4.7 | 2.5 | | | | -1.14 | 4.7 | 2.5 |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WD | WS | TEMP (C) | SIGA | SIGE | WD | WS | TEMP (C) | SIGA | SIGE | WD | WS | TEMP (C) | SIGA | SIGE |
|------------|-------|--------|----------|--------|------|-------|--------|----------|--------|------|-------|--------|----------|--------|------|
| 1.0 | | 1.12 | -8.50 | 6.7 | 1.0 | | .68 | -7.39 | 60.2 | 33.1 | | 1.18 | -6.27 | 4.3 | .6 |
| 2.0 | | 1.55 | -8.24 | 5.3 | .9 | | .94 | -7.30 | 40.3 | 18.1 | | 1.56 | -6.05 | 4.3 | .8 |
| 4.0 | | 2.15 | -7.74 | 4.3 | .8 | | 1.31 | -7.12 | 27.0 | 9.9 | | 2.07 | -5.63 | 4.2 | 1.1 |
| 8.0 | | 2.98 | -6.80 | 3.4 | .8 | | 1.82 | -6.76 | 18.1 | 5.4 | | 2.73 | -4.85 | 4.2 | 1.4 |
| 16.0 | | 4.12 | -5.17 | 2.8 | .7 | | 2.53 | -6.05 | 12.1 | 2.9 | | 3.61 | -3.51 | 4.2 | 1.8 |
| 32.0 | | 5.71 | -2.91 | 2.2 | .6 | | 3.52 | -4.66 | 8.1 | 1.6 | | 4.77 | -1.71 | 4.2 | 2.3 |
| 48.0 | | 6.92 | -1.98 | 2.0 | .6 | | 4.26 | -3.33 | 6.4 | 1.1 | | 5.62 | -1.08 | 4.1 | 2.6 |
| | DU/DZ | DTM/DZ | BU*100 | RI | | DU/DZ | DTM/DZ | BU*100 | RI | | DU/DZ | DTM/DZ | BU*100 | RI | |
| 4.0 | | .2377 | .2499 | 3.201 | .00 | | .1463 | .1005 | 3.446 | .00 | | .1947 | .2100 | 2.884 | .00 |
| 8.0 | | .1647 | .2240 | 5.954 | .00 | | .1016 | .0995 | 7.058 | .00 | | .1287 | .1870 | 5.861 | .00 |
| 16.0 | | .1141 | .1721 | 9.473 | .00 | | .0706 | .0974 | 14.287 | .00 | | .0851 | .1410 | 10.066 | .00 |
| 39.2* | | .0573 | .0800 | 10.823 | .00 | | .0207 | .1106 | 37.198 | .00 | | .0499 | .0344 | 7.097 | .00 |

* OBSERVED DATA

OBSERVED DATA

```

: DATE 15/03/77 TIME 05:00:00 : DATE 15/03/77 TIME 06:00:00 : DATE 15/03/77 TIME 07:00:00 :
: WEATHER : WEATHER : WEATHER :
: TEMP DEG C -6.7 : TEMP DEG C -8.3 : TEMP DEG C -8.3 :
: DEW POINT DEG C -12.8 : DEW POINT DEG C -13.3 : DEW POINT DEG C -12.2 :
: VISIBILITY (MI) 20 : VISIBILITY (MI) 20 : VISIBILITY (MI) 85 :
: CLD (TENTHS) :LOW MID HI 2 TOTL 2:LOW MID 1 HI 2 TOTL 3:LOW MID 2 HI 8 TOTL 10:
: CLD HT (M) :LOW MID HI 6095 :LOW MID 4570 HI 6095 :LOW MID 4570 HI 7620 :
: EXPONENTS :A= .09 B= .65 P= .30 :A= .02 B= .30 P= .28 :A= -.97 B= -.65 P= .55 :
: NET RADIATION : -7.26 MW/CM2 : -7.26 MW/CM2 : -3.98 MW/CM2 :
: RICHARDSON NO.: (4M) .27 (8M) .63(16M) 1.15 : (4M) .44 (8M) 1.01(16M) 1.79 : (4M) .34 (8M) .56(16M) .78 :
: (1/L)*10 : (39.192M) .23 (OBSERVED DATA) : (39.192M) .06 (OBSERVED DATA) : (39.192M) 1.12 (OBSERVED DATA) :
: (4M) 3.51 (8M) 8.20 (16M)13.19: (4M) 8.24 (8M)20.21 (16M)31.24: (4M) 5.15 (8M) 6.63 (16M) 6.20:
: USTAR : (4M).1060 (8M).0763 (16M).0596: (4M).0767 (8M).0511 (16M).0387: (4M).0500 (8M).0518 (16M).0585:
:
: WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE :
: HEIGHT (M) : (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) :
: 1. : -6.37 : 1.93 : 1.28. : 1.93 : 6.1 : 127. : 1.75 : -6.21 : 5.3 : 191. : 1.08 : -8.21 : 57.7 :
: 2. : 117. : 2.67 : -3.48 : 4.7 : 117. : 2.43 : -4.48 : 4.1 : 176. : 1.35 : -7.19 : 57.1 :
: 4. : 113. : 3.69 : -5.26 : 2.8 : 116. : 3.60 : -5.80 : 2.4 : 157. : 1.69 : -7.97 : 53.9 :
: 8. : 114. : 4.32 : -2.24 : 3.9 : 121. : 4.57 : -1.49 : 3.9 : 128. : 2.86 : -4.45 : 32.9 :
: 16. : 131. : 4.24 : -1.14 : 6.9 : 136. : 3.41 : -.48 : 4.9 : 115. : 4.91 : -1.80 : 6.1 :
: 32. : 158. : -.68 : 7.2 : 3.2 : 156. : -.38 : 4.8 : 2.0 : 125. : -1.50 : 2.6 : 3.6 :
: 48. :

```

LEAST SQUARES FITTED DATA

```

: WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE :
: HEIGHT (M) : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) :
: 1.0 : 1.74 : -5.89 : 4.0 : 4.0 : 2. : 1.66 : -6.43 : 3.9 : 5. : .65 : -8.64 : 214.1 : 49.6 :
: 2.0 : 2.14 : -5.63 : 4.3 : 4.3 : 4. : 2.02 : -6.10 : 4.0 : .6 : .95 : -8.33 : 109.2 : 31.5 :
: 4.0 : 2.63 : -5.13 : 4.6 : 4.6 : 6. : 2.46 : -5.46 : 4.0 : .7 : 1.39 : -7.73 : 55.7 : 20.1 :
: 8.0 : 3.22 : -4.21 : 4.9 : 4.9 : 9. : 2.99 : -4.28 : 4.1 : .9 : 2.03 : -6.62 : 28.4 : 12.8 :
: 16.0 : 3.96 : -2.69 : 5.2 : 5.2 : 1.4 : 3.64 : -2.36 : 4.1 : 1.1 : 2.96 : -4.70 : 14.5 : 8.1 :
: 32.0 : 4.86 : -.89 : 5.5 : 5.5 : 2.2 : 4.43 : -.24 : 4.2 : 1.3 : 4.33 : -2.16 : 7.4 : 5.2 :
: 48.0 : 5.48 : -.76 : 5.8 : 5.8 : 2.9 : 4.97 : -.42 : 4.2 : 1.5 : 5.40 : -1.34 : 5.0 : 4.0 :
:
: DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI :
: 4.0 : .1811 : .2461 : 2.089 : .00 : .1619 : .3128 : 3.039 : .00 : .1796 : .2960 : 9.022 : .00 :
: 8.0 : .1112 : .2135 : 4.790 : .00 : .0986 : .2680 : 6.996 : .00 : .1310 : .2625 : 14.964 : .00 :
: 16.0 : .0683 : .1485 : 8.782 : .00 : .0600 : .1782 : 12.474 : .00 : .0956 : .1954 : 20.780 : .00 :
: 39.2* : .0779 : .0388 : 9.302 : .00 : .0974 : .0163 : 5.308 : .00 : .0304 : .0287 : 6.060 : .00 :

```

* OBSERVED DATA

[illegible]

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1.0 | 1.74 | -5.89 | 4.0 | .2 | 1.66 | -6.43 | 3.9 | .5 | .65 | -8.64 | 214.1 | 49.6 |
| 2.0 | 2.14 | -5.63 | 4.3 | .4 | 2.02 | -6.10 | 4.0 | .6 | .95 | -8.33 | 109.2 | 31.5 |
| 4.0 | 2.63 | -5.13 | 4.6 | .6 | 2.46 | -5.46 | 4.0 | .7 | 1.39 | -7.73 | 55.7 | 20.1 |
| 8.0 | 3.22 | -4.21 | 4.9 | .9 | 2.99 | -4.28 | 4.1 | .9 | 2.03 | -6.62 | 28.4 | 12.8 |
| 16.0 | 3.96 | -2.69 | 5.2 | 1.4 | 3.64 | -2.36 | 4.1 | 1.1 | 2.96 | -4.70 | 14.5 | 8.1 |
| 32.0 | 4.86 | -.89 | 5.5 | 2.2 | 4.43 | -.24 | 4.2 | 1.3 | 4.33 | -2.16 | 7.4 | 5.2 |
| 48.0 | 5.48 | -.76 | 5.8 | 2.9 | 4.97 | -.42 | 4.2 | 1.5 | 5.40 | -1.34 | 5.0 | 4.0 |
| | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI |
| 4.0 | .1811 | .2461 | 2.089 | .00 | .1619 | .3128 | 3.039 | .00 | .1796 | .2960 | 9.022 | .00 |
| 8.0 | .1112 | .2135 | 4.790 | .00 | .0986 | .2680 | 6.996 | .00 | .1310 | .2625 | 14.964 | .00 |
| 16.0 | .0693 | .1485 | 8.782 | .00 | .0600 | .1782 | 12.474 | .00 | .0956 | .1954 | 20.780 | .00 |
| 39.2* | .0778 | .0388 | 9.302 | .00 | .0974 | .0163 | 5.308 | .00 | .0304 | .0287 | 6.060 | .00 |

A-100

OBSERVED DATA

| | DATE 15/03/77 | TIME 08:00:00 | WEATHER | DATE 15/03/77 | TIME 09:00:00 | WEATHER | DATE 15/03/77 | TIME 10:00:00 | WEATHER | | | | | | | | | | | |
|----------------|---------------|---------------|-----------------------|---------------|-----------------------|-----------------|---------------|---------------|-----------------------|------------|--------|-----------------|-----------|------------|-----------------|-----------|--------|-----------------|------------|------------|
| | | | TEMP DEG C -5.0 | | TEMP DEG C 0.3 | | | | TEMP DEG C 2.8 | | | | | | | | | | | |
| | | | DEW POINT DEG C -12.2 | | DEW POINT DEG C -11.7 | | | | DEW POINT DEG C -11.3 | | | | | | | | | | | |
| | | | VISIBILITY (MI) 85 | | VISIBILITY (MI) 85 | | | | VISIBILITY (MI) 85 | | | | | | | | | | | |
| CLD (TENTHS) | LOW | MID | 1 HI | 2 TOTL | 3:LOW | MID | HI | 7 TOTL | 7:LOW | MID | HI | 10 TOTL | 10: | | | | | | | |
| CLD HT (M) | LOW | MID | 4570 | HI | 7620 | LOW | MID | HI | 7620 | LOW | MID | HI | 7620 | | | | | | | |
| EXPONENTS | A= | -65 | B= | -89 | P= | .34 | A= | .32 | B= | .60 | P= | -.07 | A= | -.14 | B= | .10 | P= | .09 | | |
| NET RADIATION | | | | 5.44 | MW/CM2 | | | | | 17.37 | MW/CM2 | | | | | 27.21 | MW/CM2 | | | |
| RICHARDSON NO. | (4M) | 6.03 | (8M) | 13.71 | (16M) | 27.79 | (4M) | -1.41 | (8M) | -2.71 | (16M) | 19.54 | (4M) | -1.03 | (8M) | -3.20 | (16M) | -8.21 | | |
| | (39.192M) | 45.49 | (OBSERVED DATA) | (39.192M) | 31.53 | (OBSERVED DATA) | (39.192M) | -2.31 | (OBSERVED DATA) | (39.192M) | -2.31 | (OBSERVED DATA) | (39.192M) | -2.31 | (OBSERVED DATA) | (39.192M) | -2.31 | (OBSERVED DATA) | (39.192M) | |
| (1/L)*10 | (4M) | ***** | (8M) | ***** | (16M) | ***** | (4M) | -3.75 | (8M) | -3.57 | (16M) | ***** | (4M) | -2.74 | (8M) | -4.21 | (16M) | -5.39 | | |
| USTAR | (4M) | .0000 | (8M) | .0000 | (16M) | .0000 | (4M) | .1194 | (8M) | .1034 | (16M) | .0000 | (4M) | .1512 | (8M) | .1585 | (16M) | .1657 | | |
| HEIGHT (M) | WD | WS | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD | WS | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD | WS | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD | WS | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
| 1. | | | -7.90 | | | | | -3.85 | | | | | | | | | | | | |
| 2. | 149. | .32 | -7.43 | 76.9 | | 167. | 1.07 | -3.84 | 15.3 | | 188. | 1.37 | .88 | 18.2 | | | | | | |
| 4. | 143. | .39 | -6.71 | 70.7 | | 159. | 1.18 | -4.17 | 17.1 | | 178. | 1.57 | .25 | 18.4 | | | | | | |
| 8. | 121. | .28 | -6.99 | 59.4 | 19.4 | 159. | 1.20 | -3.59 | 15.1 | 9.2 | 179. | 1.61 | 1.10 | 17.3 | 12.2 | | | | | |
| 16. | | .51 | -5.93 | | | | 1.17 | -4.29 | | | | 1.76 | .08 | | | | | | | |
| 32. | 207. | .92 | -4.77 | 20.4 | 6.4 | 165. | .83 | -4.00 | 33.0 | 21.6 | 171. | 1.77 | -1.13 | 11.9 | 14.4 | | | | | |
| 48. | 197. | | -4.04 | 11.0 | 5.6 | 197. | | -3.44 | 40.5 | 26.8 | 172. | | -.35 | 13.2 | 14.3 | | | | | |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------|----------|------------|------------|----------|----------|------------|------------|----------|----------|------------|------------|
| 1.0 | .22 | -7.58 | 152.8 | 85.1 | 1.26 | -3.83 | 10.6 | 2.6 | 1.33 | .83 | 21.3 | 10.0 |
| 2.0 | .27 | -7.46 | 99.9 | 51.6 | 1.20 | -3.86 | 13.2 | 4.0 | 1.42 | .78 | 19.4 | 10.7 |
| 4.0 | .35 | -7.22 | 65.3 | 31.3 | 1.14 | -3.92 | 16.5 | 6.1 | 1.51 | .70 | 17.6 | 11.5 |
| 8.0 | .44 | -6.76 | 42.7 | 19.0 | 1.08 | -4.01 | 20.6 | 9.2 | 1.61 | .55 | 16.0 | 12.3 |
| 16.0 | .56 | -5.95 | 27.9 | 11.5 | 1.03 | -4.11 | 25.7 | 14.0 | 1.71 | .28 | 14.6 | 13.1 |
| 32.0 | .71 | -4.74 | 18.2 | 7.0 | .97 | -4.00 | 32.1 | 21.2 | 1.82 | -.13 | 13.2 | 14.0 |
| 48.0 | .81 | -4.06 | 14.2 | 5.2 | .95 | -3.45 | 36.5 | 27.1 | 1.89 | -.36 | 12.5 | 14.6 |
| | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI |
| 4.0 | .0277 | .1259 | 61.863 | .00 | -.0196 | -.0149 | -.670 | -.13 | .0316 | -.0287 | -.719 | -.22 |
| 8.0 | .0176 | .1154 | 140.691 | .00 | -.0093 | -.0064 | -1.284 | -.61 | .0168 | -.0253 | -2.235 | -1.60 |
| 16.0 | .0112 | .0945 | 285.278 | .00 | -.0044 | .0105 | 9.273 | .00 | .0090 | -.0184 | -5.738 | -10.51 |
| 39.2* | -.0067 | .0556 | 409.782 | .00 | .0072 | .0450 | 323.317 | .00 | .0076 | -.0037 | -6.210 | -55.70 |

* OBSERVED DATA

[illegible]

| HEIGHT (M) : | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | | |
|--------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|--------|----|
| 1.0 : | 2.63 | 8.43 | 22.5 | 7.9 : | 3.96 | 8.75 | 28.5 | 7.2 : | 4.63 | 9.70 | 19.6 | 6.2 : | | |
| 2.0 : | 2.86 | 8.33 | 20.8 | 8.6 : | 4.25 | 8.66 | 28.1 | 7.8 : | 4.95 | 9.60 | 18.7 | 6.6 : | | |
| 4.0 : | 3.11 | 8.13 | 19.2 | 9.4 : | 4.56 | 8.47 | 27.8 | 8.4 : | 5.30 | 9.42 | 17.8 | 7.0 : | | |
| 8.0 : | 3.38 | 7.78 | 17.8 | 10.3 : | 4.90 | 8.14 | 27.4 | 9.1 : | 5.67 | 9.09 | 17.0 | 7.4 : | | |
| 16.0 : | 3.67 | 7.20 | 16.5 | 11.3 : | 5.27 | 7.62 | 27.0 | 9.8 : | 6.07 | 8.56 | 16.2 | 7.9 : | | |
| 32.0 : | 3.99 | 6.56 | 15.2 | 12.3 : | 5.66 | 7.15 | 26.6 | 10.6 : | 6.49 | 7.99 | 15.4 | 8.4 : | | |
| 48.0 : | 4.19 | 6.61 | 14.5 | 13.0 : | 5.90 | 7.47 | 26.4 | 11.1 : | 6.75 | 8.10 | 15.0 | 8.7 : | | |
| ----- | | | | | | | | | | | | | | |
| : | DU/DZ | DTH/DZ | BU*100 | RI | : | DU/DZ | DTH/DZ | BU*100 | RI | : | DU/DZ | DTH/DZ | BU*100 | RI |
| ----- | | | | | | | | | | | | | | |
| 4.0 : | .0866 | -.0816 | -.470 | -.12 : | .1090 | -.0765 | -.205 | -.05 : | .1193 | -.0754 | -.149 | -.04 : | | |
| 8.0 : | .0470 | -.0680 | -1.329 | -1.07 : | .0585 | -.0613 | -.569 | -.31 : | .0638 | -.0622 | -.430 | -.15 : | | |
| 16.0 : | .0256 | -.0409 | -2.711 | -5.17 : | .0314 | -.0309 | -.997 | -1.09 : | .0341 | -.0359 | -.868 | -.84 : | | |
| 39.2* : | .0165 | -.0050 | -1.641 | -6.13 : | .0212 | .0119 | 1.953 | .00 : | .0212 | .0013 | .155 | .00 : | | |

A-103

OBSERVED DATA

| | | DATE 15/03/77 | TIME 17:00:00 | DATE 15/03/77 | TIME 18:00:00 | DATE 15/03/77 | TIME 19:00:00 | | |
|----------------|-------------|-----------------------|-----------------------|-----------------------|---------------------|-----------------------|---------------------|------------|--------------------------|
| | | WEATHER | | WEATHER | | WEATHER | | | |
| | | TEMP DEG C 8.9 | | TEMP DEG C 8.4 | | TEMP DEG C 6.7 | | | |
| | | DEW POINT DEG C -15.0 | | DEW POINT DEG C -15.0 | | DEW POINT DEG C -14.0 | | | |
| | | VISIBILITY (MI) 70 | | VISIBILITY (MI) 70 | | VISIBILITY (MI) 30 | | | |
| CLD (TENTHS) | :LOW | MID | 1 HI 10 TOTL 10:LOW | MID | 2 HI 10 TOTL 10:LOW | MID | 2 HI 10 TOTL 10:LOW | | |
| CLD HT (M) | :LOW | MID | 3660 HI 7620 | :LOW | MID | 3660 HI 7620 | :LOW | MID | 3660 HI 7620 |
| EXPCENTS | :A= | -0.11 | B= .13 P= .10 | :A= | -0.19 | B= -0.05 P= .13 | :A= | -0.05 | B= -0.51 P= .25 |
| NET RADIATION | :A= | -0.11 | B= .35 MW/CM2 | :A= | -0.19 | B= -0.05 P= .13 | :A= | -0.05 | B= -0.51 P= .25 |
| RICHARDSON NO. | : (4M) | -0.11 | (8M) -0.31(16M) -0.65 | : (4M) | -0.04 | (8M) -0.11(16M) -0.24 | : (4M) | -0.31 | (8M) -0.72(16M) 1.12 |
| | : (39.192M) | -0.42 | (OBSERVED DATA): | : (39.192M) | -0.28 | (OBSERVED DATA): | : (39.192M) | -0.22 | (OBSERVED DATA): |
| (1/L)*10 | : (4M) | -0.31 | (8M) -0.42 | : (4M) | -0.11 | (8M) -0.15 | : (4M) | 4.34 | (8M)10.53 (16M)12.55 |
| USTAR | : (4M) | 0.4277 | (8M) 0.4214 | : (4M) | 0.3099 | (8M) 0.3049 | : (4M) | 0.0400 | (8M) 0.0273 (16M) 0.0229 |
| | | | | | | | | | |
| HEIGHT (M) | :WD | WS | TEMP (C) | SIGA (DEG) | WD | WS | TEMP (C) | SIGA (DEG) | SIGA (DEG) |
| 1. | : 202. | 4.81 | 9.64 | 9.35 | 10.8 | : 187. | 3.50 | 8.82 | 11.2 |
| 2. | : 192. | 5.38 | 9.11 | 10.6 | 5.4 | : 176. | 4.07 | 8.51 | 10.1 |
| 4. | : 193. | 5.69 | 8.75 | 9.8 | 5.4 | : 177. | 4.47 | 8.47 | 9.9 |
| 8. | : 187. | 6.14 | 8.60 | 8.7 | 5.4 | : 171. | 4.86 | 8.39 | 8.2 |
| 16. | : 190. | 6.47 | 8.29 | 7.5 | 6.1 | : 172. | 5.11 | 8.16 | 6.7 |
| 32. | : 196. | | 8.03 | 8.1 | 6.8 | : 176. | 7.90 | 6.2 | 4.4 |
| 48. | | | | | | | | | |
| | | | | | | | | | |
| 1. | : 202. | 4.81 | 9.64 | 9.35 | 10.8 | : 187. | 3.50 | 8.82 | 11.2 |
| 2. | : 192. | 5.38 | 9.11 | 10.6 | 5.4 | : 176. | 4.07 | 8.51 | 10.1 |
| 4. | : 193. | 5.69 | 8.75 | 9.8 | 5.4 | : 177. | 4.47 | 8.47 | 9.9 |
| 8. | : 187. | 6.14 | 8.60 | 8.7 | 5.4 | : 171. | 4.86 | 8.39 | 8.2 |
| 16. | : 190. | 6.47 | 8.29 | 7.5 | 6.1 | : 172. | 5.11 | 8.16 | 6.7 |
| 32. | : 196. | | 8.03 | 8.1 | 6.8 | : 176. | 7.90 | 6.2 | 4.4 |
| 48. | | | | | | | | | |

LEAST SQUARES FITTED DATA

| | | WS | TEMP (C) | SIGA (DEG) | SIGA (DEG) | WS | TEMP (C) | SIGA (DEG) | SIGA (DEG) | WS | TEMP (C) | SIGA (DEG) | SIGA (DEG) |
|------------|---------|---------|----------|------------|------------|---------|----------|------------|------------|---------|----------|------------|------------|
| HEIGHT (M) | :WD | WS | TEMP (C) | SIGA (DEG) | WD | WS | TEMP (C) | SIGA (DEG) | WD | WS | TEMP (C) | SIGA (DEG) | WD |
| 1.0 | : 4.56 | 9.41 | 12.1 | 4.0 | 4.0 | : 3.30 | 8.74 | 13.4 | 5.1 | : .75 | 7.82 | 11.3 | .7 |
| 2.0 | : 4.90 | 9.34 | 11.1 | 4.3 | 4.3 | : 3.62 | 8.72 | 11.7 | 4.9 | : .89 | 7.85 | 10.9 | 1.0 |
| 4.0 | : 5.27 | 9.22 | 10.3 | 4.8 | 4.8 | : 3.97 | 8.66 | 10.3 | 4.8 | : 1.06 | 7.90 | 10.6 | 1.4 |
| 8.0 | : 5.67 | 8.98 | 9.5 | 5.2 | 5.2 | : 4.36 | 8.56 | 9.0 | 4.6 | : 1.26 | 7.98 | 10.2 | 2.0 |
| 16.0 | : 6.09 | 8.60 | 8.8 | 5.7 | 5.7 | : 4.79 | 8.37 | 7.9 | 4.4 | : 1.49 | 8.09 | 9.9 | 2.8 |
| 32.0 | : 6.55 | 8.14 | 8.1 | 6.2 | 6.2 | : 5.26 | 8.09 | 6.9 | 4.3 | : 1.76 | 8.09 | 9.6 | 4.0 |
| 48.0 | : 6.84 | 8.09 | 7.7 | 6.5 | 6.5 | : 5.56 | 7.93 | 6.4 | 4.2 | : 1.95 | 7.78 | 9.4 | 4.9 |
| | | | | | | | | | | | | | |
| | | DU/DZ | DTM/DZ | BU*100 | RI | : DU/DZ | DTM/DZ | BU*100 | RI | : DU/DZ | DTM/DZ | BU*100 | RI |
| 4.0 | : .1275 | -0.0498 | -0.099 | -0.01 | : .1239 | -0.0163 | -0.057 | -0.04 | : .0603 | .0321 | 1.599 | .00 | |
| 8.0 | : .0686 | -0.0416 | -0.288 | -0.15 | : .0680 | -0.0140 | -0.164 | -0.11 | : .0357 | .0262 | 3.716 | .00 | |
| 16.0 | : .0369 | -0.0253 | -0.607 | -0.65 | : .0374 | -0.0094 | -0.366 | -0.24 | : .0212 | .0145 | 5.827 | .00 | |
| 39.2* | : .0229 | -0.0062 | -0.760 | -1.36 | : .0278 | -0.0062 | -1.186 | -3.87 | : .0173 | -0.0019 | -3.117 | -27.91 | |

* OBSERVED DATA

OBSERVED DATA

| | | DATE 15/03/77 | | TIME 20:00:00 | | DATE 15/03/77 | | TIME 21:00:00 | | DATE 15/03/77 | | TIME 22:00:00 | | | | | | | | |
|-----------------|-----------|-----------------|------------------|-----------------|---------|------------------|-----------|-----------------|------------------|-----------------|---------|------------------|-----------|-------|------------------|-----------|-------|------------------|-------|-------|
| | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | | | | | | | | | |
| | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | | | | | | | | | |
| | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | | | | | | | | | |
| | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | | | | | | | | | |
| CLD (TENTHS) | LOW | MID | HI | 10 TOTL | 10:LOW | MID | HI | 7 TOTL | 7:LOW | MID | HI | 7 TOTL | 7: | | | | | | | |
| CLD HT (M) | LOW | MID | HI | 7620 | LOW | MID | HI | 7620 | LOW | MID | HI | 7620 | : | | | | | | | |
| EXPONENTS | A = -.29 | | B = -.54 | | P = .43 | | A = -.48 | | B = -.44 | | P = .42 | | : | | | | | | | |
| NET RADIATION | | | | | | | | | | | | | : | | | | | | | |
| RICHARDSON NO.: | (4M) | .13 | (8M) | .24 | (16M) | .32 | (4M) | .08 | (8M) | .15 | (16M) | .25 | (4M) | .16 | (8M) | .23 | (16M) | .27 | : | |
| (1/L)*10 | (39.192M) | .01 | (OBSERVED DATA): | (39.192M) | .30 | (OBSERVED DATA): | (39.192M) | .26 | (OBSERVED DATA): | (39.192M) | .26 | (OBSERVED DATA): | (39.192M) | .26 | (OBSERVED DATA): | (39.192M) | .26 | (OBSERVED DATA): | : | |
| USTAR | (4M) | .98 | (8M) | 1.40 | (16M) | 1.17 | (4M) | .43 | (8M) | .64 | (16M) | .75 | (4M) | 1.37 | (8M) | 1.25 | (16M) | .85 | : | |
| | (4M) | .1154 | (8M) | .1149 | (16M) | .1275 | (4M) | .1357 | (8M) | .1396 | (16M) | .1451 | (4M) | .0637 | (8M) | .0806 | (16M) | .1113 | : | |
| HEIGHT (M) | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE |
| | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) |
| 1. | | | 4.74 | 5.03 | 5.4 | | | 1.67 | 4.33 | 4.4 | | | 4.07 | 4.33 | 4.4 | | | 1.76 | 2.20 | 20.1 |
| 2. | 58. | 1.52 | 5.03 | 5.37 | 3.7 | | 73. | 2.25 | 4.47 | 3.7 | | 99. | .80 | 2.20 | 2.53 | 13.8 | | | | |
| 4. | 50. | 2.18 | 5.37 | 6.47 | 2.3 | | 63. | 3.07 | 5.15 | 2.0 | | 92. | 1.30 | 3.56 | 8.8 | | | | | |
| 8. | 51. | 3.14 | 6.47 | 7.31 | 1.8 | | 63. | 4.10 | 5.74 | 1.6 | | 91. | 2.01 | 4.65 | 5.5 | | | | | 2.7: |
| 16. | 55. | 4.30 | 7.31 | 7.69 | 1.8 | | 63. | 5.33 | 6.16 | .8 | | 82. | 3.20 | 5.58 | 3.1 | | | | | 2.6: |
| 32. | 62. | 4.79 | 7.57 | 7.57 | 2.5 | | 67. | | | | | 75. | 5.07 | 6.57 | 1.1 | | | | | 1.2: |
| 48. | 66. | | | | | | 72. | | | | | 76. | | | | | | | | .9: |

LEAST SQUARES FITTED DATA

| | | DATE 15/03/77 | | TIME 20:00:00 | | DATE 15/03/77 | | TIME 21:00:00 | | DATE 15/03/77 | | TIME 22:00:00 | | | | | | | | |
|----------------|-----------|-----------------|------------------|-----------------|---------|------------------|-----------|-----------------|------------------|-----------------|---------|------------------|-----------|--------|------------------|-----------|-------|------------------|-------|-------|
| | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | | | | | | | | | |
| | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | | | | | | | | | |
| | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | | | | | | | | | |
| | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | | | | | | | | | |
| CLD (TENTHS) | LOW | MID | HI | 10 TOTL | 10:LOW | MID | HI | 7 TOTL | 7:LOW | MID | HI | 7 TOTL | 7: | | | | | | | |
| CLD HT (M) | LOW | MID | HI | 7620 | LOW | MID | HI | 7620 | LOW | MID | HI | 7620 | : | | | | | | | |
| EXPONENTS | A = -.29 | | B = -.54 | | P = .43 | | A = -.48 | | B = -.44 | | P = .42 | | : | | | | | | | |
| NET RADIATION | | | | | | | | | | | | | : | | | | | | | |
| RICHARDSON NO. | (4M) | .13 | (8M) | .24 | (16M) | .32 | (4M) | .08 | (8M) | .15 | (16M) | .25 | (4M) | .16 | (8M) | .23 | (16M) | .27 | : | |
| (1/L)*10 | (39.192M) | .01 | (OBSERVED DATA): | (39.192M) | .30 | (OBSERVED DATA): | (39.192M) | .26 | (OBSERVED DATA): | (39.192M) | .26 | (OBSERVED DATA): | (39.192M) | .26 | (OBSERVED DATA): | (39.192M) | .26 | (OBSERVED DATA): | : | |
| USTAR | (4M) | .98 | (8M) | 1.40 | (16M) | 1.17 | (4M) | .43 | (8M) | .64 | (16M) | .75 | (4M) | 1.37 | (8M) | 1.25 | (16M) | .85 | : | |
| | (4M) | .1154 | (8M) | .1149 | (16M) | .1275 | (4M) | .1357 | (8M) | .1396 | (16M) | .1451 | (4M) | .0637 | (8M) | .0806 | (16M) | .1113 | : | |
| HEIGHT (M) | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE |
| | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) |
| 1.0 | : | 1.20 | 4.91 | 5.3 | 2.2 | : | 1.26 | 4.21 | 6.3 | 3.8 | : | .51 | 2.01 | 43.5 | 12.8 | : | : | : | : | : |
| 2.0 | : | 1.61 | 5.10 | 4.4 | 1.5 | : | 1.68 | 4.32 | 4.5 | 2.8 | : | .81 | 2.20 | 24.4 | 8.0 | : | : | : | : | : |
| 4.0 | : | 2.17 | 5.46 | 3.6 | 1.0 | : | 2.26 | 4.54 | 3.3 | 2.1 | : | 1.28 | 2.57 | 13.7 | 5.0 | : | : | : | : | : |
| 8.0 | : | 2.93 | 6.11 | 2.9 | .7 | : | 3.02 | 4.93 | 2.3 | 1.5 | : | 2.02 | 3.25 | 7.7 | 3.1 | : | : | : | : | : |
| 16.0 | : | 3.94 | 7.13 | 2.4 | .5 | : | 4.05 | 5.59 | 1.7 | 1.1 | : | 3.20 | 4.42 | 4.3 | 2.0 | : | : | : | : | : |
| 32.0 | : | 5.30 | 8.04 | 2.0 | .3 | : | 5.42 | 6.41 | 1.2 | .8 | : | 5.07 | 5.96 | 2.4 | 1.2 | : | : | : | : | : |
| 48.0 | : | 6.31 | 7.44 | 1.8 | .3 | : | 6.43 | 6.55 | 1.0 | .7 | : | 6.63 | 6.43 | 1.7 | .9 | : | : | : | : | : |
| | | DU/DZ | DTH/DZ | BU*100 | RI | : | DU/DZ | DTH/DZ | BU*100 | RI | : | DU/DZ | DTH/DZ | BU*100 | RI | : | | | | |
| 4.0 | : | .2187 | .1788 | 2.131 | .00 | : | .2229 | .1111 | 1.232 | .00 | : | .2027 | .1855 | 6.457 | .00 | : | | | | |
| 8.0 | : | .1472 | .1494 | 3.919 | .00 | : | .1492 | .0979 | 2.418 | .00 | : | .1604 | .1646 | 9.124 | .00 | : | | | | |
| 16.0 | : | .0991 | .0905 | 5.219 | .00 | : | .0999 | .0716 | 3.932 | .00 | : | .1270 | .1229 | 10.825 | .00 | : | | | | |
| 39.2* | : | .0951 | .0025 | .447 | .00 | : | .0688 | .0400 | 6.349 | .00 | : | .0978 | .0719 | 11.627 | .00 | : | | | | |

* OBSERVED DATA

OBSERVED DATA

| | DATE 15/03/77 | TIME 23:00:00 | DATE 16/03/77 | TIME 00:00:00 | DATE 16/03/77 | TIME 01:00:00 | | | | |
|-----------------|---------------|-----------------------|-----------------|----------------------|-----------------|---------------------|-------|------|-------|-------|
| WEATHER | | | WEATHER | | WEATHER | | | | | |
| TEMP DEG C | 3.9 | | TEMP DEG C | 3.4 | TEMP DEG C | 2.2 | | | | |
| DEW POINT DEG C | -10.0 | | DEW POINT DEG C | -9.4 | DEW POINT DEG C | -8.9 | | | | |
| VISIBILITY (MI) | 20 | | VISIBILITY (MI) | 20 | VISIBILITY (MI) | 20 | | | | |
| CLD (TENTHS) | LOW | HI 10 TOTL 10:LOW | MID | HI 10 TOTL 10:LOW | MID | HI 10 TOTL 10:LOW | | | | |
| CLD HT (M) | LOW | MID | HI 7620 | LOW | MID | HI 7620 | | | | |
| EXPONENTS | A = -.39 | B = -.58 | P = .32 | A = -.34 | B = -.99 | P = .42 | | | | |
| NET RADIATION | -6.14 MW/CM2 | | | -5.44 MW/CM2 | | | | | | |
| RICHARDSON NO. | (4M) | .05 (8M) | .12 (16M) | .28 (4M) | .07 (8M) | .14 (16M) | | | | |
| | (39.192M) | 82.20 (OBSERVED DATA) | (39.192M) | 4.04 (OBSERVED DATA) | (39.192M) | .39 (OBSERVED DATA) | | | | |
| (1/L)*10 | (4M) | .19 (8M) | .39 (16M) | .93 (4M) | .32 (8M) | .53 (16M) | | | | |
| USTAR | (4M) | .2322 (8M) | .2181 (16M) | .1894 (4M) | .1534 (8M) | .1570 (16M) | | | | |
| | (4M) | .2322 (8M) | .2181 (16M) | .1894 (4M) | .1534 (8M) | .1570 (16M) | | | | |
| HEIGHT (M) | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE |
| | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) |
| 1. | | | 2.72 | | | | | | 1.82 | |
| 2. | 110. | 3.02 | 3.02 | 8.0 | | | 109. | 1.99 | 2.08 | 6.6 |
| 4. | 100. | 3.60 | 3.05 | 6.8 | | | 99. | 2.46 | 2.17 | 5.7 |
| 8. | 98. | 4.21 | 3.47 | 5.8 | 3.8 | 96. | 3.10 | 2.69 | 4.7 | 3.6 |
| 16. | 94. | 4.90 | 4.03 | 5.2 | 4.0 | 93. | 4.08 | 3.59 | 3.9 | 3.7 |
| 32. | 92. | 7.73 | 5.07 | 3.0 | 1.8 | 92. | 6.62 | 4.37 | 1.9 | 1.4 |
| 48. | 94. | 6.20 | 2.2 | 1.5 | 138. | | | 5.64 | 2.9 | .6 |

LEAST SQUARES FITTED DATA

| ----- | | | | | | | | | | | | | | | |
|------------|---|-------|-------|------------|------|---|-------|------------|--------|------|---|------------|-------|-------|-----|
| : WS | | | | : WS | | | | : WS | | | | : WS | | | |
| TEMP (C) | | | | TEMP (C) | | | | TEMP (C) | | | | TEMP (C) | | | |
| SIGA (DEG) | | | | SIGA (DEG) | | | | SIGA (DEG) | | | | SIGA (DEG) | | | |
| SIGE (DEG) | | | | SIGE (DEG) | | | | SIGE (DEG) | | | | SIGE (DEG) | | | |
| WS (M/S) | | | | WS (M/S) | | | | WS (M/S) | | | | WS (M/S) | | | |
| ----- | | | | | | | | | | | | | | | |
| HEIGHT (M) | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| 1.0 | : | 2.31 | 2.84 | 11.9 | 14.8 | : | 1.39 | 1.93 | 8.9 | 37.9 | : | 1.67 | 1.42 | 7.9 | 3.7 |
| 2.0 | : | 2.87 | 2.92 | 9.1 | 9.9 | : | 1.86 | 2.03 | 7.0 | 19.0 | : | 2.17 | 1.54 | 6.1 | 3.1 |
| 4.0 | : | 3.57 | 3.08 | 6.9 | 6.6 | : | 2.49 | 2.24 | 5.5 | 9.6 | : | 2.82 | 1.78 | 4.8 | 2.6 |
| 8.0 | : | 4.44 | 3.40 | 5.3 | 4.5 | : | 3.33 | 2.63 | 4.4 | 4.8 | : | 3.66 | 2.23 | 3.7 | 2.2 |
| 16.0 | : | 5.53 | 4.00 | 4.0 | 3.0 | : | 4.46 | 3.36 | 3.4 | 2.4 | : | 4.74 | 3.01 | 2.8 | 1.8 |
| 32.0 | : | 6.88 | 5.14 | 3.1 | 2.0 | : | 5.96 | 4.61 | 2.7 | 1.2 | : | 6.15 | 4.05 | 2.2 | 1.5 |
| 48.0 | : | 7.82 | 6.17 | 2.6 | 1.6 | : | 7.07 | 5.56 | 2.4 | .8 | : | 7.17 | 4.41 | 1.9 | 1.4 |
| ----- | | | | | | | | | | | | | | | |
| : DU/DZ | | | | : DU/DZ | | | | : DU/DZ | | | | : DU/DZ | | | |
| DTH/DZ | | | | DTH/DZ | | | | DTH/DZ | | | | DTH/DZ | | | |
| BU*100 | | | | BU*100 | | | | BU*100 | | | | BU*100 | | | |
| RI | | | | RI | | | | RI | | | | RI | | | |
| 4.0 | : | .2625 | .0887 | .395 | .00 | : | .2449 | .1097 | 1.008 | .00 | : | .2474 | .1253 | .901 | .00 |
| 8.0 | : | .1634 | .0867 | .995 | .00 | : | .1638 | .1040 | 2.131 | .00 | : | .1605 | .1121 | 1.911 | .00 |
| 16.0 | : | .1017 | .0827 | 2.446 | .00 | : | .1096 | .0925 | 4.225 | .00 | : | .1041 | .0857 | 3.459 | .00 |
| 39.2* | : | .0059 | .0806 | 7.207 | .00 | : | .0279 | .0894 | 10.398 | .00 | : | .0667 | .0494 | 6.190 | .00 |
| ----- | | | | | | | | | | | | | | | |

* OBSERVED DATA

[illegible]

| LEAST SQUARES FITTED DATA | | | | | | | | | | | | | |
|---------------------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|--|
| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | |
| 1.0 | 1.14 | 1.11 | 15.7 | 3.2 | 1.08 | -2.24 | 11.9 | 12.6 | .67 | -2.53 | 15.8 | 15.5 | |
| 2.0 | 1.47 | 1.31 | 13.0 | 3.1 | 1.44 | -2.18 | 9.3 | 8.3 | .82 | -2.46 | 12.9 | 10.3 | |
| 4.0 | 1.90 | 1.71 | 10.8 | 3.1 | 1.92 | -2.05 | 7.3 | 5.4 | 1.02 | -2.34 | 10.5 | 6.9 | |
| 8.0 | 2.45 | 2.43 | 9.0 | 3.0 | 2.56 | -1.77 | 5.7 | 3.6 | 1.25 | -2.11 | 8.5 | 4.6 | |
| 16.0 | 3.15 | 3.56 | 7.4 | 2.9 | 3.41 | -1.21 | 4.5 | 2.3 | 1.55 | -1.69 | 6.9 | 3.1 | |
| 32.0 | 4.07 | 4.64 | 6.2 | 2.9 | 4.54 | .00 | 3.5 | 1.5 | 1.91 | -1.07 | 5.6 | 2.0 | |
| 48.0 | 4.72 | 4.11 | 5.5 | 2.8 | 5.38 | 1.32 | 3.0 | 1.2 | 2.16 | -0.73 | 5.0 | 1.6 | |
| | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | |
| 4.0 | .1624 | .1955 | 3.096 | .00 | .1863 | .0775 | 1.219 | .00 | .0720 | .0697 | 3.913 | .00 | |
| 8.0 | .1047 | .1643 | 6.248 | .00 | .1242 | .0796 | 2.818 | .00 | .0445 | .0642 | 9.445 | .00 | |
| 16.0 | .0675 | .1020 | 9.298 | .00 | .0828 | .0839 | 6.670 | .00 | .0275 | .0532 | 20.506 | .00 | |
| 39.2* | .0585 | .0119 | 3.651 | .00 | .0347 | .1037 | 22.199 | .00 | .0190 | .0438 | 60.678 | .00 | |

* OBSERVED DATA

OBSERVED DATA

| DATE 16/03/77 TIME 05:00:00 : DATE 16/03/77 TIME 06:00:00 : DATE 16/03/77 TIME 07:00:00 : | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|
| WEATHER : | | | | | | | | | |
| TEMP DEG C -1.7 : TEMP DEG C -4.6 : TEMP DEG C -3.9 : | | | | | | | | | |
| DEW POINT DEG C -10.0 : DEW POINT DEG C -10.5 : DEW POINT DEG C -10.0 : | | | | | | | | | |
| VISIBILITY (MI) 20 : VISIBILITY (MI) 20 : VISIBILITY (MI) 50 : | | | | | | | | | |
| CLD (TENTHS) HI 6 TOTL 6:LOW MID 9 HI TOTL 9:LOW MID 4 HI 6 TOTL 10: | | | | | | | | | |
| CLD HT (M) MID HI 7620 : LOW MID 4880 HI : LOW MID 4880 HI 7620 : | | | | | | | | | |
| EXPONENTS A = -.83 B = -.53 P = .48 : A = .13 B = .29 P = .27 : A = -.21 B = .54 P = .30 : | | | | | | | | | |
| NET RADIATION : -4.33 MW/CM2 : -4.33 MW/CM2 : -3.28 MW/CM2 : | | | | | | | | | |
| RICHARDSON NO. : (4M) 1.08 (8M) 1.85 (16M) 2.33 : (4M) 1.90 (8M) 4.33 (16M) 7.08 : (4M) .28*(8M) 1.02*(16M) 2.56 : | | | | | | | | | |
| (1/L)*10 : (39.192M) .48 (OBSERVED DATA) : (39.192M) 11.85 (OBSERVED DATA) : (39.192M) .11 (OBSERVED DATA) : | | | | | | | | | |
| USTAR : (4M) 46.22 (8M) 66.78 (16M) 52.41 : (4M) ***** (8M) ***** (16M) ***** : (4M) 3.61*(8M) 20.8*(16M) 63.00 : | | | | | | | | | |
| : (4M) .0116 (8M) .0102 (16M) .0114 : (4M) .0125 (8M) .0071 (16M) .0053 : (4M) .0618*(8M) .0395*(16M) .0184 : | | | | | | | | | |
| ----- | | | | | | | | | |
| : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | | | | | | | | | |
| HEIGHT (M) : (DEG) (M/S) (C) (DEG) (DEG) (M/S) (C) (DEG) (DEG) (M/S) (C) (DEG) (DEG) : | | | | | | | | | |
| 1. : -3.43 : : : -4.78 : : : -3.46 : : : | | | | | | | | | |
| 2. : 150. : .75 : -2.95 : 24.4 : : 191. : : 186. : : 1.10 : -3.15 : 10.9 : : : | | | | | | | | | |
| 4. : 183. : .60 : -2.34 : 52.3 : : 183. : : 187. : : 1.56 : -2.59 : 7.6 : : : | | | | | | | | | |
| 8. : 250. : .50 : -1.45 : 14.0 : 4.3 : 209. : : 196. : : 2.33 : -1.27 : 3.8 : 1.2 : | | | | | | | | | |
| 16. : 262. : 1.47 : -1.76 : 5.1 : 2.1 : 243. : : 201. : : 2.61 : -.11 : 5.2 : 1.2 : | | | | | | | | | |
| 32. : 269. : 2.52 : -.18 : 2.7 : 1.6 : 264. : : 223. : : 2.37 : .30 : 5.3 : 2.3 : | | | | | | | | | |
| 48. : 290. : -.29 : 4.2 : 1.7 : 1.7 : 287. : : 245. : : .28 : 4.9 : 3.0 : | | | | | | | | | |

LEAST SQUARES FITTED DATA

| | | | | | | | | | |
|---|--------|---|--------|---|--------|---|--------|--------------------------|-------|
| WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | | WD WS TEMP SIGA SIGE : | |
| HEIGHT (M) | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (DEG) |
| 1.0 | .36 | -3.07 | 72.7 | 11.3 | .81 | -4.28 | 5.2 | .6 | 1.03 |
| 2.0 | .50 | -2.88 | 40.8 | 7.8 | .98 | -3.97 | 5.7 | .7 | 1.26 |
| 4.0 | .69 | -2.51 | 22.9 | 5.4 | 1.18 | -3.37 | 6.2 | .8 | 1.55 |
| 8.0 | .96 | -1.85 | 12.9 | 3.7 | 1.42 | -2.30 | 6.9 | 1.0 | 1.90 |
| 16.0 | 1.34 | -.81 | 7.2 | 2.6 | 1.71 | -.62 | 7.5 | 1.2 | 2.33 |
| 32.0 | 1.87 | .14 | 4.1 | 1.8 | 2.07 | .90 | 8.3 | 1.5 | 2.86 |
| 48.0 | 2.27 | -.41 | 2.9 | 1.4 | 2.31 | -.05 | 8.7 | 1.7 | 3.23 |
| ----- | | | | | | | | | |
| DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : | | DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : | | DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : | | DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : | | DU/DZ DTH/DZ BU*100 RI : | |
| 4.0 | .0780 | .1809 | 21.898 | .00 | .0741 | .2873 | 12.056 | .00 | .1065 |
| 8.0 | .0543 | .1516 | 37.688 | .00 | .0447 | .2393 | 27.476 | .00 | .0654 |
| 16.0 | .0379 | .0929 | 47.386 | .00 | .0270 | .1433 | 44.910 | .00 | .0401 |
| 39.2* | -.0153 | .0031 | 2.968 | .00 | -.0051 | .0088 | 8.701 | .00 | .0536 |
| | | | | | | | | | .0088 |
| | | | | | | | | | 6.345 |
| | | | | | | | | | .00 |

* OBSERVED DATA

OBSERVED DATA

| | | | | | | | |
|-----------------|--------------------------|---------------------|---------------------------|----------------------|------------|---------------|------------------|
| DATE 16/03/77 | | TIME 08:00:00 | | DATE 16/03/77 | | TIME 09:00:00 | |
| WEATHER | | WEATHER | | WEATHER | | WEATHER | |
| TEMP DEG C | | -3.3 | | TEMP DEG C | | -3.3 | |
| DEW POINT DEG C | | -10.0 | | DEW POINT DEG C | | -7.8 | |
| VISIBILITY (MI) | | 85 | | VISIBILITY (MI) | | 70 | |
| CLD (TENTHS) | LOW | MID | 8 HI | 2 TOTL | 10:LOW | MID | 10 HI |
| CLD HT (M) | LOW | MID | 4880 HI | 7620 | LOW | MID | 4880 HI |
| EXPONENTS | A = -.21 B = .31 P = .33 | | A = -.23 B = -.55 P = .20 | | | | |
| NET RADIATION | 1.81 MW/CM2 | | 4.74 MW/CM2 | | | | |
| RICHARDSON NO. | (4M) | .13* (8M) | .38*(16M) | 1.77 | (4M) | .06 (8M) | .29(16M) 1.51 |
| | (39.192M) | .26 (OBSERVED DATA) | (39.192M) | 6.12 (OBSERVED DATA) | | | |
| (1/L)*10 | (4M) | .92* (8M) | 3.12*(16M) | 30.54 | (4M) | .30 (8M) | 1.96 (16M)22.30 |
| USTAR | (4M) | .088* (8M) | .076* (16M) | .0287 | (4M) | .1253 (8M) | .0821 (16M).0319 |
| HEIGHT (M) | | WD | WS | TEMP (C) | SIGA (DEG) | WD | TEMP (C) |
| | | (DEG) | (M/S) | (C) | (DEG) | (M/S) | (C) |
| 1. | | | | | | | |
| 2. | | 179. | 1.21 | -4.27 | 5.5 | | -1.22 |
| 4. | | 170. | 1.65 | -4.10 | 4.4 | | 1.72 |
| 8. | | 171. | 2.37 | -3.48 | 2.8 | | 2.00 |
| 16. | | 172. | 3.40 | -1.58 | 3.2 | | 2.25 |
| 32. | | 183. | 2.66 | -.30 | 2.1 | | 2.64 |
| 48. | | 177. | | .17 | 3.5 | | 2.98 |
| | | | | | | | .27 |
| | | | | | | | 3.8 |
| | | | | | | | 3.7 |
| | | | | | | | 1.5 |
| | | | | | | | 2.1 |
| | | | | | | | 2.1 |

LEAST SQUARES FITTED DATA

| | | | | | | | | | | | |
|------------|--|-------|-------|----------|------------|------------|-------|-------|----------|------------|------------|
| HEIGHT (M) | | WD | WS | TEMP (C) | SIGA (DEG) | SIGA (DEG) | WD | WS | TEMP (C) | SIGA (DEG) | SIGA (DEG) |
| 1.0 | | | 1.06 | -4.49 | 5.6 | .6 | | 1.50 | -1.28 | 8.7 | 14.1 |
| 2.0 | | | 1.34 | -4.28 | 4.9 | .7 | | 1.73 | -1.28 | 7.4 | 9.6 |
| 4.0 | | | 1.68 | -3.88 | 4.2 | .9 | | 1.98 | -1.28 | 6.4 | 6.6 |
| 8.0 | | | 2.12 | -3.14 | 3.6 | 1.1 | | 2.27 | -1.26 | 5.4 | 4.5 |
| 16.0 | | | 2.67 | -1.88 | 3.2 | 1.3 | | 2.61 | -1.13 | 4.7 | 3.1 |
| 32.0 | | | 3.36 | -.25 | 2.7 | 1.7 | | 3.00 | -.59 | 4.0 | 2.1 |
| 48.0 | | | 3.84 | .17 | 2.5 | 1.9 | | 3.25 | .36 | 3.6 | 1.7 |
| | | DU/DZ | DT/DZ | BU*100 | RI | | DU/DZ | DT/DZ | BU*100 | RI | |
| 4.0 | | .1302 | .2007 | 4.118 | .00 | | .0913 | .0144 | .212 | .00 | |
| 8.0 | | .0819 | .1772 | 9.160 | .00 | | .0524 | .0222 | .990 | .00 | |
| 16.0 | | .0515 | .1303 | 16.936 | .00 | | .0300 | .0378 | 5.119 | .00 | |
| 39.2* | | .0737 | .0394 | 21.324 | .00 | | .0167 | .0475 | 27.242 | .00 | |

* OBSERVED DATA

OBSERVED DATA

| | | | | | |
|------------------|---|------------------|---|------------------|---|
| DATE 16/03/77 | TIME 10:00:00 | DATE 16/03/77 | TIME 11:00:00 | DATE 16/03/77 | TIME 12:00:00 |
| WEATHER | WEATHER | WEATHER | WEATHER | WEATHER | WEATHER |
| TEMP DEG C | 3.5 | TEMP DEG C | 6.7 | TEMP DEG C | 2.3 |
| DEW POINT DEG C | -8.2 | DEW POINT DEG C | -9.4 | DEW POINT DEG C | -10.0 |
| VISIBILITY (MI) | 70 | VISIBILITY (MI) | 85 | VISIBILITY (MI) | 85 |
| CLD (TENTHS) | 9 HI | CLD (TENTHS) | 10 HI | CLD (TENTHS) | 10 HI |
| CLD HT (M) | 4880 HI | CLD HT (M) | 4880 HI | CLD HT (M) | 4270 HI |
| EXPONENTS | LOW MID | EXPONENTS | LOW MID | EXPONENTS | LOW MID |
| NET RADIATION : | A = -.05 R = .10 P = .15 | NET RADIATION : | A = -.26 R = .15 P = .05 | NET RADIATION : | A = -.08 R = .18 P = .10 |
| RICHARDSON NO. : | 7.60 MW/CM2 | RICHARDSON NO. : | 11.58 MW/CM2 | RICHARDSON NO. : | 11.93 MW/CM2 |
| (1/L)*10 | (4M) -.49 (8M) -1.42 (16M) -3.55 | (1/L)*10 | (4M) -2.02 (8M) -6.52 (16M) -18.3 | (1/L)*10 | (4M) -.34 (8M) -.98 (16M) -1.98 |
| USTAR | (39.192M)***** (OBSERVED DATA) : | USTAR | (39.192M)***** (OBSERVED DATA) : | USTAR | (39.192M)***** (OBSERVED DATA) : |
| | (4M) -1.32 (8M) -1.89 (16M) -2.34 | | (4M) -5.33 (8M) -8.69 (16M) -11.5 | | (4M) -.93 (8M) -1.30 (16M) -1.31 |
| | (4M) .0650 (8M) .0687 (16M) .0731 | | (4M) .1082 (8M) .1145 (16M) .1232 | | (4M) .2066 (8M) .2091 (16M) .2087 |
| HEIGHT (M) : | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | HEIGHT (M) : | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | HEIGHT (M) : | WD WS TEMP SIGA SIGE : |
| 1. | 125. : .64 1.93 26.6 : 16. : .92 3.47 42.2 : 322. : 2.08 4.57 11.4 | 1. | 125. : .64 1.93 26.6 : 16. : .92 3.47 42.2 : 322. : 2.08 4.57 11.4 | 1. | 125. : .64 1.93 26.6 : 16. : .92 3.47 42.2 : 322. : 2.08 4.57 11.4 |
| 2. | 120. : .75 1.94 27.0 : 6. : .99 3.34 37.2 : 313. : 2.50 4.35 10.4 | 2. | 120. : .75 1.94 27.0 : 6. : .99 3.34 37.2 : 313. : 2.50 4.35 10.4 | 2. | 120. : .75 1.94 27.0 : 6. : .99 3.34 37.2 : 313. : 2.50 4.35 10.4 |
| 4. | 127. : .74 1.73 19.9 16.3 : 3. : 1.00 3.25 30.7 19.1 : 312. : 2.55 4.19 9.5 | 4. | 127. : .74 1.73 19.9 16.3 : 3. : 1.00 3.25 30.7 19.1 : 312. : 2.55 4.19 9.5 | 4. | 127. : .74 1.73 19.9 16.3 : 3. : 1.00 3.25 30.7 19.1 : 312. : 2.55 4.19 9.5 |
| 8. | 141. : .88 1.68 20.9 25.5 : 357. : 1.06 3.16 30.9 21.8 : 308. : 2.69 4.04 9.4 | 8. | 141. : .88 1.68 20.9 25.5 : 357. : 1.06 3.16 30.9 21.8 : 308. : 2.69 4.04 9.4 | 8. | 141. : .88 1.68 20.9 25.5 : 357. : 1.06 3.16 30.9 21.8 : 308. : 2.69 4.04 9.4 |
| 16. | 143. : .98 1.49 24.6 22.5 : 356. : 1.07 2.96 21.8 20.7 : 310. : 2.85 3.78 7.7 | 16. | 143. : .98 1.49 24.6 22.5 : 356. : 1.07 2.96 21.8 20.7 : 310. : 2.85 3.78 7.7 | 16. | 143. : .98 1.49 24.6 22.5 : 356. : 1.07 2.96 21.8 20.7 : 310. : 2.85 3.78 7.7 |
| 32. | 146. : 1.24 22.4 20.3 : 12. : 2.73 17.6 26.9 : 324. : 3.62 9.3 8.5 | 32. | 146. : 1.24 22.4 20.3 : 12. : 2.73 17.6 26.9 : 324. : 3.62 9.3 8.5 | 32. | 146. : 1.24 22.4 20.3 : 12. : 2.73 17.6 26.9 : 324. : 3.62 9.3 8.5 |
| 48. | | 48. | | 48. | |

LEAST SQUARES FITTED DATA

| HEIGHT (M) : | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|--------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1.0 : | .58 | 1.95 | 26.3 | 15.3 | .90 | 3.42 | 53.2 | 13.9 | 2.04 | 4.57 | 11.4 | 4.1 |
| 2.0 : | .64 | 1.93 | 25.4 | 16.4 | .93 | 3.40 | 44.5 | 15.5 | 2.19 | 4.52 | 10.8 | 4.7 |
| 4.0 : | .71 | 1.89 | 24.6 | 17.6 | .97 | 3.37 | 37.2 | 17.1 | 2.35 | 4.44 | 10.2 | 5.3 |
| 8.0 : | .79 | 1.82 | 23.7 | 18.9 | 1.01 | 3.30 | 31.1 | 19.0 | 2.52 | 4.29 | 9.7 | 6.0 |
| 16.0 : | .87 | 1.68 | 23.0 | 20.3 | 1.04 | 3.16 | 26.0 | 21.1 | 2.70 | 4.03 | 9.2 | 6.7 |
| 32.0 : | .97 | 1.45 | 22.2 | 21.8 | 1.08 | 2.93 | 21.7 | 23.4 | 2.90 | 3.71 | 8.7 | 7.6 |
| 48.0 : | 1.03 | 1.26 | 21.8 | 22.7 | 1.11 | 2.74 | 19.6 | 24.8 | 3.02 | 3.65 | 8.4 | 8.2 |
| ----- | | | | | | | | | | | | |
| : | DU/DZ | DTM/DZ | BU*100 | RI | DU/DZ | DTM/DZ | BU*100 | RI | DU/DZ | DTM/DZ | BU*100 | RI |
| ----- | | | | | | | | | | | | |
| 4.0 : | .0241 | -.0079 | -.890 | -.37 | .0120 | -.0082 | -.492 | -.09 | .0551 | -.0292 | -.299 | -.09 |
| 8.0 : | .0133 | -.0071 | -2.601 | -3.17 | .0062 | -.0072 | -1.615 | -.46 | .0296 | -.0241 | -.859 | -.49 |
| 16.0 : | .0074 | -.0054 | -6.492 | -22.85 | .0032 | -.0053 | -4.426 | -2.80 | .0159 | -.0141 | -1.741 | -2.42 |
| 39.2* : | .0028 | -.0056 | -30.818 | -378.22 | .0024 | -.0044 | -20.194 | -163.05 | .0108 | -.0000 | -.000 | -.00 |

* OBSERVED DATA

OBSERVED DATA

| | | | | | | | |
|-----------------|---------------------------------|-----------------|-----------------------------------|-----------------|-----------------------------------|-----------------|-----------------------------------|
| DATE | 16/03/77 | TIME | 13:00:00 | DATE | 16/03/77 | TIME | 14:00:00 |
| WEATHER | | WEATHER | | WEATHER | | WEATHER | |
| TEMP DEG C | 7.4 | TEMP DEG C | 8.1 | TEMP DEG C | 8.1 | TEMP DEG C | 8.1 |
| DEW POINT DEG C | -9.4 | DEW POINT DEG C | -10.0 | DEW POINT DEG C | -10.0 | DEW POINT DEG C | -10.0 |
| VISIBILITY (MI) | 85 | VISIBILITY (MI) | 70 | VISIBILITY (MI) | 70 | VISIBILITY (MI) | 70 |
| CLD (TENTHS) | LOW | CLD (TENTHS) | LOW | CLD (TENTHS) | LOW | CLD (TENTHS) | LOW |
| CLD HT (M) | MID 10 HI | CLD HT (M) | MID 10 HI | CLD HT (M) | MID 10 HI | CLD HT (M) | MID 10 HI |
| EXPONENTS | MID 4270 HI | EXPONENTS | MID 4270 HI | EXPONENTS | MID 4270 HI | EXPONENTS | MID 4270 HI |
| NET RADIATION | A= -.02 B= .14 P= .09 | NET RADIATION | A= -.02 B= .02 P= .05 | NET RADIATION | A= -.02 B= .02 P= .05 | NET RADIATION | A= -.02 B= .02 P= .05 |
| RICHARDSON NO. | 10.88 MW/CM2 | RICHARDSON NO. | 10.88 MW/CM2 | RICHARDSON NO. | 10.88 MW/CM2 | RICHARDSON NO. | 10.88 MW/CM2 |
| (1/L)*10 | (4M) -.21 (8M) -.63 (16M) -1.35 | (1/L)*10 | (4M) -.645 (8M) -18.6 (16M) -29.0 | (1/L)*10 | (4M) -.645 (8M) -18.6 (16M) -29.0 | (1/L)*10 | (4M) -.645 (8M) -18.6 (16M) -29.0 |
| USTAR | (39.192M) -.80 (OBSERVED DATA) | USTAR | (39.192M) 11.88 (OBSERVED DATA) | USTAR | (39.192M) 11.88 (OBSERVED DATA) | USTAR | (39.192M) 11.88 (OBSERVED DATA) |
| | (4M) -.60 (8M) -.85 (16M) -.90 | | (4M) -16.9 (8M) -24.4 (16M) -19.0 | | (4M) -16.9 (8M) -24.4 (16M) -19.0 | | (4M) -16.9 (8M) -24.4 (16M) -19.0 |
| | (4M).3030 (8M).3004 (16M).2971 | | (4M).4680 (8M).4975 (16M).4468 | | (4M).4680 (8M).4975 (16M).4468 | | (4M).4680 (8M).4975 (16M).4468 |
| HEIGHT (M) | WD (M/S) | TEMP (C) | SIGA (DEG) | SIGA (DEG) | WD (M/S) | TEMP (C) | SIGA (DEG) |
| 1. | 351. | 3.33 | 5.34 | 7.8 | 359. | 2.99 | 6.30 |
| 2. | 342. | 3.62 | 4.89 | 7.4 | 350. | 3.25 | 6.16 |
| 4. | 342. | 3.80 | 4.79 | 7.2 | 350. | 3.52 | 6.02 |
| 8. | 338. | 4.08 | 4.64 | 6.9 | 357. | 3.64 | 5.80 |
| 16. | 338. | 4.22 | 4.40 | 6.4 | 353. | 3.33 | 5.64 |
| 32. | 338. | 4.22 | 4.18 | 8.0 | 342. | 3.69 | 5.21 |
| 48. | 350. | | | | | | 10.1 |

LEAST SQUARES FITTED DATA

| | | | | | | | | |
|------------|----------|----------|------------|------------|----------|----------|------------|------------|
| HEIGHT (M) | WD (M/S) | TEMP (C) | SIGA (DEG) | SIGA (DEG) | WD (M/S) | TEMP (C) | SIGA (DEG) | SIGA (DEG) |
| 1.0 | 3.18 | 5.19 | 7.6 | 3.9 | 3.00 | 6.68 | 10.6 | 5.2 |
| 2.0 | 3.37 | 5.15 | 7.5 | 4.3 | 3.10 | 6.41 | 10.4 | 5.3 |
| 4.0 | 3.58 | 5.06 | 7.4 | 4.8 | 3.21 | 5.90 | 10.3 | 5.3 |
| 8.0 | 3.80 | 4.90 | 7.3 | 5.2 | 3.31 | 5.00 | 10.1 | 5.4 |
| 16.0 | 4.03 | 4.64 | 7.2 | 5.7 | 3.42 | 3.70 | 10.0 | 5.5 |
| 32.0 | 4.27 | 4.30 | 7.1 | 6.3 | 3.54 | 3.06 | 9.8 | 5.6 |
| 48.0 | 4.43 | 4.22 | 7.1 | 6.7 | 3.61 | 5.05 | 9.7 | 5.6 |
| DU/DZ | DTM/DZ | BU*100 | RI | DU/DZ | DTM/DZ | BU*100 | RI | RI |
| 4.0 | .0708 | -.0304 | -.134 | -.05 | .0350 | -.2247 | -1.228 | -.12 |
| 8.0 | .0376 | -.0253 | -.397 | -.17 | .0181 | -.1734 | -3.563 | -.65 |
| 16.0 | .0199 | -.0152 | -.845 | -.67 | .0093 | -.0709 | -5.481 | -4.26 |
| 39.2* | .0129 | -.0038 | -1.094 | -2.39 | .0225 | .1700 | 75.774 | .00 |

* OBSERVED DATA

** 1400 16 AND 32M SIGA AND SIGE DATA NOT USED IN LEAST SQUARES FIT

OBSERVED DATA

```

: DATE 16/03/77 TIME 15:00:00 : DATE 16/03/77 TIME 16:00:00 : DATE 16/03/77 TIME 17:00:00 :
: WEATHER : WEATHER : WEATHER :
: TEMP DEG C 8.9 : TEMP DEG C 10.0 : TEMP DEG C 10.0 :
: DEW POINT DEG C -11.7 : DEW POINT DEG C -12.8 : DEW POINT DEG C -13.9 :
: VISIBILITY (MI) 70 : VISIBILITY (MI) 70 : VISIBILITY (MI) 70 :
: CLD (TENTHS) :LOW MID 10 HI TOTAL 10:LOW MID 3 HI 7 TOTL 10:
: CLD HT (M) :LOW MID 4270 HI :LOW MID 3660 HI :LOW MID 4570 HI 6095 :
: EXPCNTS : A = -.16 B = -.01 P = .10 : A = -.12 B = .12 P = .08 : A = -.13 B = .04 P = .10 :
: NET RADIATION : 9.07 MW/CM2 : 9.07 MW/CM2 : 6.14 MW/CM2 :
: RICHARDSON NO.: (4M) -.15 (8M) -.45 (16M) -.98 : (4M) -.22 (8M) -.68 (16M) -1.52 : (4M) -.06 (8M) -.18 (16M) -.48 :
: (1/L)*10 : (39.192M)***** (OBSERVED DATA): (39.192M)***** (OBSERVED DATA): (39.192M)***** (OBSERVED DATA):
: USTAR : (4M) -.43 (8M) -.61 (16M) -.65 : (4M) -.63 (8M) -.91 (16M) -1.01 : (4M) -.18 (8M) -.26 (16M) -.33 :
: : (4M).2913 (8M).2890 (16M).2881 : (4M).2940 (8M).2908 (16M).2878 : (4M).1983 (8M).1932 (16M).1932 :

```

| HEIGHT (M) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|
| 1. | | | 7.02 | | | | | 8.38 | | | | | 8.44 | | |
| 2. | 16. | 3.19 | 6.93 | 10.1 | | 13. | 3.16 | 8.27 | 9.0 | | 32. | 2.27 | 8.44 | 10.3 | |
| 4. | 7. | 3.54 | 6.76 | 10.0 | | 5. | 3.51 | 8.01 | 8.7 | | 24. | 2.54 | 8.21 | 9.1 | |
| 8. | 1. | 3.87 | 6.57 | 9.3 | 5.9: | 0. | 3.78 | 7.90 | 7.6 | 5.8: | 19. | 2.73 | 8.23 | 9.0 | 4.6: |
| 16. | 3. | 4.18 | 6.38 | 8.6 | 5.8: | 3. | 3.92 | 7.78 | 7.5 | 6.0: | 22. | 2.97 | 8.18 | 8.9 | 4.7: |
| 32. | 8. | 4.32 | 6.15 | 6.6 | 5.5: | 8. | 4.05 | 7.55 | 6.4 | 6.6: | 25. | 3.13 | 7.96 | 7.1 | 4.3: |
| 48. | 5. | 4.37 | 5.91 | 6.3 | 6.0: | 5. | 4.07 | 7.31 | 6.3 | 7.2: | 24. | 3.12 | 7.74 | 6.7 | 5.3: |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------|----------|------------|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|
| 1.0 | 3.07 | 6.94 | 12.2 | 5.9 | | 3.11 | 8.25 | 9.9 | 4.4 | | 2.18 | 8.38 | 11.4 | 4.1 |
| 2.0 | 3.29 | 6.89 | 10.9 | 5.9 | | 3.28 | 8.21 | 9.1 | 4.8 | | 2.34 | 8.37 | 10.4 | 4.3 |
| 4.0 | 3.52 | 6.81 | 9.8 | 5.9 | | 3.46 | 8.14 | 8.4 | 5.2 | | 2.51 | 8.34 | 9.5 | 4.4 |
| 8.0 | 3.77 | 6.66 | 8.7 | 5.8 | | 3.65 | 8.01 | 7.8 | 5.7 | | 2.69 | 8.27 | 8.7 | 4.5 |
| 16.0 | 4.04 | 6.41 | 7.8 | 5.8 | | 3.85 | 7.78 | 7.2 | 6.2 | | 2.89 | 8.15 | 8.0 | 4.7 |
| 32.0 | 4.33 | 6.06 | 7.0 | 5.8 | | 4.06 | 7.46 | 6.6 | 6.7 | | 3.10 | 7.94 | 7.3 | 4.8 |
| 48.0 | 4.51 | 5.94 | 6.6 | 5.8 | | 4.19 | 7.35 | 6.3 | 7.1 | | 3.23 | 7.75 | 7.0 | 4.9 |

| | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI |
|-------|-------|--------|--------|------|-------|--------|--------|-------|
| 4.0 | .0811 | -.0285 | -.129 | -.01 | .0615 | -.0243 | -.113 | -.04 |
| 8.0 | .0435 | -.0240 | -.378 | -.22 | .0324 | -.0205 | -.343 | -.14 |
| 16.0 | .0233 | -.0151 | -.831 | -.80 | .0171 | -.0127 | -.768 | -.50 |
| 39.2* | .0031 | -.0050 | -1.429 | -.84 | .0013 | -.0050 | -1.628 | -1.21 |

* OBSERVED DATA

| | DATE 16/03/77 | TIME 18:00:00 | DATE 16/03/77 | TIME 19:00:00 | DATE 16/03/77 | TIME 20:00:00 |
|----------------|-----------------|------------------------------|-----------------|------------------------------|-----------------|------------------------------|
| CLD (TENTHS) | WEATHER | 8.4 | WEATHER | 6.1 | WEATHER | 5.6 |
| | TEMP DEG C | -11.1 | TEMP DEG C | -8.9 | TEMP DEG C | -8.9 |
| | DEW POINT DEG C | 70 | DEW POINT DEG C | 30 | DEW POINT DEG C | 20 |
| | VISIBILITY (MI) | 3 HI | VISIBILITY (MI) | 3 HI | VISIBILITY (MI) | HI |
| CLD HT (M) | MID | 3660 HI 6095 | MID | 3660 HI 7620 | MID | HI 7620 |
| EXPONENTS | LOW | A = -1.06 P = .38 | LOW | A = -.60 B = -.43 P = .52 | LOW | A = .11 B = .88 P = .16 |
| NET RADIATION | MW/CM2 | -5.09 | MW/CM2 | -7.26 | MW/CM2 | -5.79 |
| RICHARDSON NO. | (4M) | .06 (8M) .12 (16M) .20 | (4M) | .23 (8M) .38 (16M) .47 | (4M) | .54* (8M) 6.16 (16M) 10.53 |
| (1/L)*10 | (39.192M) | .36 (OBSERVED DATA) | (39.192M) | 1.80 (OBSERVED DATA) | (39.192M) | -3.12 (OBSERVED DATA) |
| USTAR | (4M) | .29 (8M) .44 (16M) .51 | (4M) | 2.55 (8M) 3.15 (16M) 2.40 | (4M) | 12.3*(8M)***** (16M)***** |
| | (4M) | .1430 (8M) .1444 (16M) .1479 | (4M) | .0624 (8M) .0657 (16M) .0796 | (4M) | .0594*(8M) .0076 (16M) .0051 |

| HEIGHT (M) | : (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|---------|----------|----------|------------|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|
| 1. | : | | 6.55 | | | | | 2.77 | | | | | .11 | | |
| 2. | : | 30. | 6.73 | 6.8 | | 135. | .99 | 3.42 | 23.9 | | 23. | 1.34 | 1.08 | 8.3 | |
| 4. | : | 21. | 6.73 | 5.2 | | 110. | 1.41 | 3.93 | 21.1 | | 223. | 2.16 | 2.68 | 5.5 | |
| 8. | : | 16. | 7.08 | 4.0 | | 3.3: | 1.99 | 4.92 | 12.7 | | 3.5: | 2.62 | 5.17 | 5.1 | 1.0: |
| 16. | : | 18. | 7.41 | 3.1 | | 2.5: | 3.33 | 5.84 | 5.7 | | 2.1: | 2.53 | 5.68 | 6.5 | 1.0: |
| 32. | : | 22. | 7.70 | 1.9 | | 1.2: | 4.49 | 6.75 | 2.8 | | .9: | 2.60 | 5.74 | 8.8 | 2.2: |
| 48. | : | 20. | 7.67 | 1.5 | | .5: | 4.79 | 6.88 | 6.7 | | 2.2: | 2.48 | 5.50 | 10.0 | 4.7: |

| HEIGHT (M) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : |
|--------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|-----------------|
| 1.0 : | 1.35 : | 6.60 : | 10.0 : | 36.7 : | .70 : | 3.17 : | 39.0 : | 7.2 : | 1.52 : | 1.17 : | 5.5 : | .1 : |
| 2.0 : | 1.75 : | 6.67 : | 7.2 : | 17.6 : | 1.00 : | 3.39 : | 25.8 : | 5.3 : | 1.70 : | 1.54 : | 6.0 : | .2 : |
| 4.0 : | 2.26 : | 6.79 : | 5.2 : | 8.4 : | 1.44 : | 3.80 : | 17.0 : | 3.9 : | 1.90 : | 2.26 : | 6.4 : | .4 : |
| 8.0 : | 3.94 : | 7.02 : | 3.8 : | 4.0 : | 2.07 : | 4.56 : | 11.2 : | 2.9 : | 2.13 : | 3.54 : | 6.9 : | .8 : |
| 16.0 : | 3.81 : | 7.38 : | 2.7 : | 1.9 : | 2.97 : | 5.78 : | 7.4 : | 2.2 : | 2.38 : | 5.49 : | 7.4 : | 1.4 : |
| 32.0 : | 4.94 : | 7.75 : | 2.0 : | .9 : | 4.27 : | 7.05 : | 4.9 : | 1.6 : | 2.66 : | 6.91 : | 8.0 : | 2.6 : |
| 48.0 : | 5.76 : | 7.65 : | 1.6 : | .6 : | 5.28 : | 6.76 : | 3.8 : | 1.4 : | 2.85 : | 5.05 : | 8.4 : | 3.7 : |
| <hr/> | | | | | | | | | | | | |
| : | DU/DZ : | DTH/DZ : | 8U*100 : | RI : | DU/DZ : | DTH/DZ : | 8U*100 : | RI : | DU/DZ : | DTH/DZ : | 8U*100 : | RI : |
| 4.0 : | .1987 : | .0682 : | .745 : | .00 : | .1778 : | .2052 : | 5.624 : | .00 : | .0716 : | .3432 : | 5.415 : | .00 : |
| 8.0 : | .1289 : | .0590 : | 1.530 : | .00 : | .1278 : | .1748 : | 9.244 : | .00 : | .0401 : | .2789 : | 13.983 : | .00 : |
| 16.0 : | .0836 : | .0406 : | 2.498 : | .00 : | .0919 : | .1139 : | 11.604 : | .00 : | .0224 : | .1504 : | 23.904 : | .00 : |
| 39.2* : | .0281 : | .0081 : | 1.514 : | .00 : | .0188 : | .0181 : | 4.556 : | .00 : | -.0075 : | -.0050 : | -4.164 : | -21.72 : |

A-113

OBSERVED DATA

| DATE 16/03/77 TIME 21:00:00 : DATE 16/03/77 TIME 22:00:00 : DATE 16/03/77 TIME 23:00:00 : | | | | | | | | | | | | | |
|--|------|------|------|------|------|------|------|-----|------|------|------|------|------|
| WEATHER | | | | | | | | | | | | | |
| TEMP DEG C 2.8 : TEMP DEG C 2.8 : TEMP DEG C 3.4 | | | | | | | | | | | | | |
| DEW POINT DEG C -10.5 : DEW POINT DEG C -8.9 : DEW POINT DEG C -8.9 | | | | | | | | | | | | | |
| VISIBILITY (MI) 20 : VISIBILITY (MI) 20 : VISIBILITY (MI) 20 | | | | | | | | | | | | | |
| CLD (TENTHS) :LOW HI 10 TOTL 10:LOW MID HI 10 TOTL 10:LOW MID HI 10 TOTL 10: | | | | | | | | | | | | | |
| CLD HT (M) :LOW MID HI 7620 :LOW MID HI 7620 :LOW MID HI 7620 | | | | | | | | | | | | | |
| EXPONENTS : A= .21 B= .52 P= .17 : A= -.04 B= .43 P= .32 : A= .03 B= .46 P= .17 | | | | | | | | | | | | | |
| NET RADIATION : -5.79 MW/CM2 : -3.63 MW/CM2 : -3.63 MW/CM2 | | | | | | | | | | | | | |
| RICHARDSOEN NO. : (4M) .211*(8M) .97*(16M) 4.40 : (4M) .40 (8M) .87(16M) 1.43 : (4M) .205*(8M) .93*(16M) 6.90 : | | | | | | | | | | | | | |
| : (39.192M) .88 (OBSERVED DATA) : (39.192M) .72 (OBSERVED DATA) : (39.192M) 28.18 (OBSERVED DATA) : | | | | | | | | | | | | | |
| (L/L)*10 : (4M) 2.21*(8M) 19.0*(16M)***** : (4M) 7.02 (8M) 15.41 (16M) 20.12 : (4M) 2.10*(8M) 17.4*(16M)***** : | | | | | | | | | | | | | |
| USTAR : (4M) .128* (8M) .066* (16M) .0168 : (4M) .0596 (8M) .0429 (16M) .0357 : (4M) .091*(8M) .0523*(16M) .0080 : | | | | | | | | | | | | | |
| ----- | | | | | | | | | | | | | |
| HEIGHT (M) :WD (M/S) :TEMP (C) :SIGA (DEG) :SIGE (DEG) :WD (M/S) :TEMP (C) :SIGA (DEG) :SIGE (DEG) :WD (M/S) :TEMP (C) :SIGA (DEG) :SIGE (DEG) : | | | | | | | | | | | | | |
| 1. | 143. | 2.00 | -12 | 6.4 | 185. | 1.45 | 1.03 | 6.3 | 190. | 1.42 | 1.56 | 11.9 | : |
| 2. | 132. | 2.84 | 1.86 | 5.5 | 179. | 1.85 | 1.63 | 5.2 | 184. | 2.01 | 2.12 | 11.9 | : |
| 4. | 127. | 3.77 | 3.57 | 6.8 | 179. | 2.25 | 2.63 | 7.1 | 184. | 2.88 | 3.55 | 8.6 | 1.8: |
| 8. | 122. | 3.95 | 4.56 | 8.4 | 175. | 2.70 | 3.44 | 8.1 | 181. | 3.14 | 4.80 | 9.9 | 2.0: |
| 16. | 119. | 3.82 | 4.94 | 9.8 | 182. | 3.51 | 4.08 | 6.5 | 173. | 2.57 | 5.09 | 14.8 | 3.1: |
| 32. | 119. | 3.49 | 4.95 | 11.2 | 180. | 4.02 | 4.25 | 4.2 | 158. | 2.53 | 5.01 | 11.5 | 4.1: |
| 48. | 119. | 3.49 | 4.95 | 11.2 | 180. | 4.02 | 4.25 | 4.2 | 158. | 2.53 | 5.01 | 11.5 | 4.1: |

LEAST SQUARES FITTED DATA

| DATE 16/03/77 TIME 21:00:00 : DATE 16/03/77 TIME 22:00:00 : DATE 16/03/77 TIME 23:00:00 : | | | | | | | | | | | | | |
|--|---|-------------------|------------|-------------------|----------|-------------------|------------|-------------------|----------|-------------------|------------|-------------------|----------|
| WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | |
| TEMP (DEG C) | 2.8 | TEMP (DEG C) | 2.8 | TEMP (DEG C) | 2.8 | TEMP (DEG C) | 3.4 | TEMP (DEG C) | 3.4 | TEMP (DEG C) | 3.4 | TEMP (DEG C) | 3.4 |
| DEW POINT (DEG C) | -10.5 | DEW POINT (DEG C) | -8.9 | DEW POINT (DEG C) | -8.9 | DEW POINT (DEG C) | -8.9 | DEW POINT (DEG C) | -8.9 | DEW POINT (DEG C) | -8.9 | DEW POINT (DEG C) | -8.9 |
| VISIBILITY (MI) | 20 | VISIBILITY (MI) | 20 | VISIBILITY (MI) | 20 | VISIBILITY (MI) | 20 | VISIBILITY (MI) | 20 | VISIBILITY (MI) | 20 | VISIBILITY (MI) | 20 |
| CLD (TENTHS) | LOW | CLD (TENTHS) | LOW | CLD (TENTHS) | LOW | CLD (TENTHS) | LOW | CLD (TENTHS) | LOW | CLD (TENTHS) | LOW | CLD (TENTHS) | LOW |
| CLD HT (M) | LOW | CLD HT (M) | LOW | CLD HT (M) | LOW | CLD HT (M) | LOW | CLD HT (M) | LOW | CLD HT (M) | LOW | CLD HT (M) | LOW |
| EXPONENTS | A= .21 B= .52 P= .17 : A= -.04 B= .43 P= .32 : A= -.04 B= .43 P= .32 : A= .03 B= .46 P= .17 : A= .03 B= .46 P= .17 : A= .03 B= .46 P= .17 | | | | | | | | | | | | |
| NET RADIATION | -5.79 MW/CM2 : -3.63 MW/CM2 : -3.63 MW/CM2 : -3.63 MW/CM2 : -3.63 MW/CM2 : -3.63 MW/CM2 | | | | | | | | | | | | |
| RICHARDSOEN NO. | (4M) .211*(8M) .97*(16M) 4.40 : (4M) .40 (8M) .87(16M) 1.43 : (4M) .205*(8M) .93*(16M) 6.90 : (4M) .205*(8M) .93*(16M) 6.90 : (4M) .205*(8M) .93*(16M) 6.90 : (4M) .205*(8M) .93*(16M) 6.90 | | | | | | | | | | | | |
| HEIGHT (M) | WD (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (M/S) |
| 1.0 | 2.16 | .57 | 4.8 | .4 | 1.17 | .83 | 6.8 | .5 | 1.57 | 1.44 | 10.5 | .6 | 1.57 |
| 2.0 | 2.43 | .89 | 5.5 | .6 | 1.46 | 1.04 | 6.6 | .6 | 1.77 | 1.69 | 10.8 | .9 | 1.77 |
| 4.0 | 2.73 | 1.50 | 6.3 | .9 | 1.81 | 1.44 | 6.4 | .8 | 1.99 | 2.19 | 11.0 | 1.2 | 1.99 |
| 8.0 | 3.07 | 2.60 | 7.3 | 1.2 | 2.25 | 2.17 | 6.2 | 1.1 | 2.23 | 3.07 | 11.2 | 1.7 | 2.23 |
| 16.0 | 3.45 | 4.32 | 8.4 | 1.8 | 2.80 | 3.33 | 6.0 | 1.5 | 2.51 | 4.45 | 11.4 | 2.3 | 2.51 |
| 32.0 | 3.88 | 5.78 | 9.7 | 2.6 | 3.49 | 4.49 | 5.8 | 2.1 | 2.82 | 5.67 | 11.6 | 3.2 | 2.82 |
| 48.0 | 4.15 | 6.63 | 10.6 | 3.2 | 3.96 | 4.09 | 5.7 | 2.5 | 3.02 | 4.81 | 11.8 | 3.8 | 3.02 |
| ----- | | | | | | | | | | | | | |
| : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : | | | | | | | | | | | | | |
| 4.0 | .1070 | .2958 | 2.270 | .00 | .1329 | .1982 | 3.450 | .00 | .0778 | .2395 | 3.458 | .00 | .0778 |
| 8.0 | .0601 | .2447 | 5.916 | .00 | .0827 | .1677 | 7.526 | .00 | .0437 | .1991 | 9.065 | .00 | .0437 |
| 16.0 | .0338 | .1425 | 10.828 | .00 | .0514 | .1068 | 12.335 | .00 | .0246 | .1181 | 16.933 | .00 | .0246 |
| 39.2* | -.0206 | .0106 | 4.266 | .00 | .0319 | .0206 | 8.006 | .00 | -.0025 | .0050 | 4.153 | .00 | -.0025 |

* OBSERVED DATA

[illegible]

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1.0 | 1.56 | 1.01 | 5.6 | .2 | 1.35 | .19 | 9.9 | 1.6 | 1.27 | .06 | 7.6 | .4 |
| 2.0 | 1.80 | 1.21 | 6.7 | .4 | 1.64 | .39 | 10.9 | 1.9 | 1.47 | .36 | 7.1 | .5 |
| 4.0 | 2.09 | 1.58 | 7.9 | .7 | 2.01 | .79 | 11.9 | 2.3 | 1.70 | .93 | 6.7 | .7 |
| 8.0 | 2.42 | 2.27 | 9.4 | 1.3 | 2.46 | 1.53 | 13.1 | 2.8 | 1.96 | 1.94 | 6.3 | .9 |
| 16.0 | 2.80 | 3.35 | 11.1 | 2.3 | 3.01 | 2.71 | 14.3 | 3.5 | 2.26 | 3.45 | 5.9 | 1.2 |
| 32.0 | 3.24 | 4.35 | 13.1 | 4.1 | 3.67 | 3.97 | 15.7 | 4.2 | 2.62 | 4.47 | 5.6 | 1.6 |
| 48.0 | 3.53 | 3.82 | 14.5 | 5.7 | 4.13 | 3.75 | 16.6 | 4.7 | 2.85 | 2.81 | 5.4 | 1.8 |
| | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI |
| 4.0 | .1025 | .1869 | 2.447 | .00 | .1356 | .1986 | 2.812 | .00 | .0819 | .2727 | 5.429 | .00 |
| 8.0 | .0594 | .1569 | 6.111 | .00 | .0829 | .1697 | 6.411 | .00 | .0473 | .2203 | 13.091 | .00 |
| 16.0 | .0344 | .0968 | 11.203 | .00 | .0507 | .1118 | 11.259 | .00 | .0274 | .1155 | 20.457 | .00 |
| 39.2* | -.0444 | .0081 | 5.137 | .00 | .0200 | .0350 | 13.946 | .00 | -.0075 | -.0031 | -2.645 | -10.46 |

A-115

[illegible]

| HEIGHT (M) | : WD :(DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | : WD :(DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | : WD :(DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------------|-------------|-------------|---------------|---------------|----------------|-------------|-------------|---------------|---------------|----------------|-------------|-------------|---------------|---------------|
| 1. | : | | .09 | | | : | | 1.19 | | | : | | 2.67 | | : |
| 2. | : 328. | .68 | .55 | 35.5 | | : 237. | 1.26 | 1.42 | 10.2 | | : 227. | 4.19 | 2.87 | 6.6 | : |
| 4. | : 315. | .94 | 1.08 | 29.8 | | : 231. | 1.69 | 1.57 | 8.9 | | : 219. | 4.78 | 2.92 | 5.4 | : |
| 8. | : 303. | 1.31 | 1.90 | 20.0 | | 3.0: 226. | 2.20 | 2.02 | 5.9 | 1.5: 216. | 1.5: 216. | 5.42 | 3.23 | 5.1 | 4.0: |
| 16. | : 289. | 1.75 | 2.48 | 8.9 | | 3.2: 224. | 2.92 | 2.44 | 6.7 | 1.5: 215. | 1.5: 215. | 6.44 | 3.47 | 4.2 | 3.3: |
| 32. | : 293. | 2.14 | 2.68 | 8.8 | | 5.3: 232. | 3.41 | 3.20 | 6.5 | 2.2: 219. | 2.2: 219. | 8.15 | 3.77 | 2.6 | 2.3: |
| 48. | : 290. | 2.70 | 2.59 | 6.8 | | 4.2: 227. | 3.55 | 3.74 | 8.8 | 3.2: 215. | 3.2: 215. | 9.20 | 3.90 | 1.8 | 1.4: |

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1.0 | .52 | .46 | 56.6 | 1.7 | 1.06 | 1.31 | 9.2 | .6 | 3.39 | 2.77 | 9.6 | 13.8 |
| 2.0 | .70 | .62 | 38.4 | 2.1 | 1.33 | 1.39 | 8.7 | .8 | 4.02 | 2.83 | 7.4 | 9.4 |
| 4.0 | .94 | .93 | 26.1 | 2.5 | 1.68 | 1.56 | 8.3 | 1.0 | 4.78 | 2.93 | 5.7 | 6.4 |
| 8.0 | 1.26 | 1.49 | 17.7 | 3.0 | 2.12 | 1.88 | 7.8 | 1.4 | 5.68 | 3.13 | 4.4 | 4.4 |
| 16.0 | 1.69 | 2.35 | 12.0 | 3.6 | 2.67 | 2.45 | 7.4 | 1.8 | 6.75 | 3.46 | 3.4 | 3.0 |
| 32.0 | 2.26 | 3.07 | 8.2 | 4.3 | 3.37 | 3.28 | 7.1 | 2.4 | 8.02 | 3.84 | 2.6 | 2.1 |
| 48.0 | 2.68 | 2.44 | 6.5 | 4.7 | 3.86 | 3.71 | 6.8 | 2.8 | 8.87 | 3.87 | 2.2 | 1.6 |
| | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI |
| 4.0 | .0930 | .1544 | 10.023 | .00 | .1312 | .0913 | 1.843 | .00 | .2760 | .0605 | .150 | .00 |
| 8.0 | .0623 | .1282 | 18.487 | .00 | .0827 | .0835 | 4.237 | .00 | .1640 | .0535 | .377 | .00 |
| 16.0 | .0418 | .0758 | 24.253 | .00 | .0522 | .0681 | 8.663 | .00 | .0974 | .0397 | .790 | .00 |
| 39.2* | .0350 | .0044 | 4.174 | .00 | .0087 | .0437 | 19.739 | .00 | .0656 | .0181 | 1.325 | .00 |

A-116

| | DATE 17/03/77 | TIME 06:00:00 | WEATHER | TEMP DEG C | DEW POINT DEG C | VISIBILITY (MI) | 20 | DATE 17/03/77 | TIME 07:00:00 | WEATHER | TEMP DEG C | DEW POINT DEG C | VISIBILITY (MI) | 20 | DATE 17/03/77 | TIME 08:00:00 | |
|---------------|---------------|------------------|-----------------------|-----------------------|-----------------------|-----------------|-----------|---------------|-----------------|---------------|---------------|-----------------|-----------------|-----------------|-----------------|---------------|-------|
| CLD (TENTHS) | LOW | MID 8 HI 2 | TOTAL 10:3050 HI 7620 | 2 HI 2 | TOTAL 10:3050 HI 7620 | 6 MID 6 | 3 HI 3 | DATE 17/03/77 | TIME 07:00:00 | WEATHER | TEMP DEG C | DEW POINT DEG C | VISIBILITY (MI) | 20 | DATE 17/03/77 | TIME 08:00:00 | |
| CLD HT (M) | LOW | MID 3050 HI 7620 | 2 HI 2 | TOTAL 10:3050 HI 7620 | 6 MID 6 | 3 HI 3 | 3 HI 3 | DATE 17/03/77 | TIME 07:00:00 | WEATHER | TEMP DEG C | DEW POINT DEG C | VISIBILITY (MI) | 20 | DATE 17/03/77 | TIME 08:00:00 | |
| EXPOSURES | A = -0.19 | B = .42 | P = .14 | A = -0.10 | B = .33 | P = .18 | A = -0.01 | B = .13 | P = .16 | DATE 17/03/77 | TIME 07:00:00 | WEATHER | TEMP DEG C | DEW POINT DEG C | VISIBILITY (MI) | 20 | |
| NET RADIATION | -3.28 | MW/CM2 | -1.81 | MW/CM2 | 3.63 | MW/CM2 | 0.01 | (16M) | 0.01 | (16M) | 0.01 | (16M) | 0.01 | (16M) | 0.01 | (16M) | |
| CHARDSON NO. | (4M) | .42 | (8M) | 1.18 | (16M) | 2.42 | (4M) | .57 | (8M) | 1.57 | (16M) | 3.72 | (4M) | .01 | (8M) | .01 | (16M) |
| (1/L)*10 | (39.192M) | .49 | (OBSERVED DATA) | (39.192M) | 14.63 | (OBSERVED DATA) | (39.192M) | .02 | (OBSERVED DATA) | (39.192M) | .02 | (OBSERVED DATA) | (39.192M) | .02 | (OBSERVED DATA) | (39.192M) | .02 |
| USTAR | (4M) | 7.78 | (8M) | 27.40 | (16M) | 56.25 | (4M) | 13.49 | (8M) | 48.30 | (16M) | 0.0106 | (4M) | .02 | (8M) | .02 | (16M) |
| | (4M) | .1021 | (8M) | .0534 | (16M) | .0319 | (4M) | .0385 | (8M) | .0199 | (16M) | .0106 | (4M) | .1127 | (8M) | .1100 | (16M) |
| | (4M) | .1021 | (8M) | .0534 | (16M) | .0319 | (4M) | .0385 | (8M) | .0199 | (16M) | .0106 | (4M) | .1127 | (8M) | .1100 | (16M) |

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1.0 | 2.64 | 1.92 | 21.0 | 1.4 | 1.12 | 1.00 | 49.8 | 1.2 | 1.23 | 2.79 | 10.8 | 4.2 |
| 2.0 | 2.90 | 2.04 | 18.5 | 1.9 | 1.27 | 1.06 | 46.6 | 1.6 | 1.38 | 2.78 | 10.7 | 4.6 |
| 4.0 | 3.19 | 2.28 | 16.2 | 2.5 | 1.45 | 1.16 | 43.6 | 2.0 | 1.54 | 2.77 | 10.6 | 5.1 |
| 8.0 | 3.51 | 2.72 | 14.3 | 3.4 | 1.64 | 1.36 | 40.8 | 2.5 | 1.72 | 2.73 | 10.6 | 5.6 |
| 16.0 | 3.86 | 3.40 | 12.5 | 4.5 | 1.87 | 1.69 | 38.2 | 3.1 | 1.92 | 2.65 | 10.5 | 6.1 |
| 32.0 | 4.25 | 4.02 | 11.0 | 6.1 | 2.12 | 2.12 | 35.7 | 3.9 | 2.15 | 2.48 | 10.4 | 6.7 |
| 48.0 | 4.49 | 3.65 | 10.2 | 7.2 | 2.29 | 2.21 | 34.3 | 4.5 | 2.29 | 2.30 | 10.4 | 7.1 |
| | | | | | | | | | | | | |
| | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI |
| 4.0 | .1016 | .1227 | .687 | .00 | .0617 | .0605 | 1.653 | .00 | .0569 | .0006 | .015 | .00 |
| 8.0 | .0559 | .1033 | 1.907 | .00 | .0351 | .0541 | 4.579 | .00 | .0318 | .0003 | .025 | .00 |
| 16.0 | .0307 | .0644 | 3.919 | .00 | .0199 | .0414 | 10.841 | .00 | .0177 | .0003 | -.071 | -.03 |
| 39.2* | .0150 | .0031 | .959 | .00 | .0075 | .0231 | 27.767 | .00 | .0325 | -.0006 | -.743 | -1.69 |

A-117

OBSERVED DATA

| DATE 17/03/77 | | TIME 09:00:00 | | DATE 17/03/77 | | TIME 10:00:00 | | DATE 17/03/77 | | TIME 11:00:01 | | |
|----------------|-------------------------|----------------------|-------------------------|----------------------|-------------------------|----------------------|-------------------------|----------------------|-------------------------|----------------------|-------------------------|----------------------|
| WEATHER | | WEATHER SW- | | WEATHER SW- | | WEATHER SW- | | WEATHER SW- | | WEATHER SW- | | |
| CLD (TENTHS) | LOW 10 MID HI | TOTAL | 10:LOW 10 MID HI | TOTAL | 10:LOW 10 MID HI | TOTAL | 10:LOW 10 MID HI | TOTAL | 10:LOW 10 MID HI | TOTAL | 10:LOW 10 MID HI | |
| CLD HT (M) | LOW 1220 MID | HI | LOW 91 MID | HI | LOW 152 MID | HI | LOW 152 MID | HI | LOW 152 MID | HI | LOW 152 MID | |
| EXPONENTS | A = -0.14 B = -0.21 P = | 0.17 | A = -0.26 B = -0.28 P = | 0.16 | A = -0.22 B = -0.11 P = | 0.13 | A = -0.22 B = -0.11 P = | 0.13 | A = -0.22 B = -0.11 P = | 0.13 | A = -0.22 B = -0.11 P = | |
| NET RADIATION | 6.91 MW/CM2 | | 4.33 MW/CM2 | | 4.33 MW/CM2 | | 4.33 MW/CM2 | | 4.33 MW/CM2 | | 4.33 MW/CM2 | |
| RICHARDSON NO. | (4M) | (16M) | (4M) | (16M) | (4M) | (16M) | (4M) | (16M) | (4M) | (16M) | (4M) | (16M) |
| (1/L)*10 | (39.192M) | (OBSERVED DATA): | (39.192M) | (OBSERVED DATA): | (39.192M) | (OBSERVED DATA): | (39.192M) | (OBSERVED DATA): | (39.192M) | (OBSERVED DATA): | (39.192M) | (OBSERVED DATA): |
| USTAR | (4M) | (16M) | (4M) | (16M) | (4M) | (16M) | (4M) | (16M) | (4M) | (16M) | (4M) | (16M) |
| HEIGHT (M) | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE |
| 1. | 345. | 4.36 | 7.2 | 4. | 4.58 | 6.0 | 351. | 3.96 | 351. | 3.96 | 12.1 | |
| 2. | 336. | 5.02 | 6.6 | 356. | 5.16 | 4.9 | 351. | 4.42 | 351. | 4.42 | 5.8 | |
| 4. | 330. | 5.38 | 6.1 | 350. | 5.79 | 4.6 | 344. | 4.81 | 344. | 4.81 | 5.4 | 3.9: |
| 8. | 333. | 6.19 | 5.3 | 351. | 6.52 | 3.9 | 346. | 5.34 | 346. | 5.34 | 5.0 | 3.6: |
| 16. | 339. | 6.95 | 5.3 | 356. | 7.08 | 2.9 | 349. | 5.74 | 349. | 5.74 | 4.8 | 3.5: |
| 32. | 336. | 7.50 | 4.5 | 352. | 7.60 | 2.5 | 344. | 6.06 | 344. | 6.06 | 5.1 | 3.1: |
| 48. | | | | | | | | | | | | |

LEAST SQUARES FITTED DATA

| DATE 17/03/77 | | TIME 09:00:00 | | DATE 17/03/77 | | TIME 10:00:00 | | DATE 17/03/77 | | TIME 11:00:01 | | |
|----------------|-------------------------|----------------------|-------------------------|----------------------|-------------------------|----------------------|-------------------------|----------------------|-------------------------|----------------------|-------------------------|----------------------|
| WEATHER | | WEATHER SW- | | WEATHER SW- | | WEATHER SW- | | WEATHER SW- | | WEATHER SW- | | |
| CLD (TENTHS) | LOW 10 MID HI | TOTAL | 10:LOW 10 MID HI | TOTAL | 10:LOW 10 MID HI | TOTAL | 10:LOW 10 MID HI | TOTAL | 10:LOW 10 MID HI | TOTAL | 10:LOW 10 MID HI | |
| CLD HT (M) | LOW 1220 MID | HI | LOW 91 MID | HI | LOW 152 MID | HI | LOW 152 MID | HI | LOW 152 MID | HI | LOW 152 MID | |
| EXPONENTS | A = -0.14 B = -0.21 P = | 0.17 | A = -0.26 B = -0.28 P = | 0.16 | A = -0.22 B = -0.11 P = | 0.13 | A = -0.22 B = -0.11 P = | 0.13 | A = -0.22 B = -0.11 P = | 0.13 | A = -0.22 B = -0.11 P = | |
| NET RADIATION | 6.91 MW/CM2 | | 4.33 MW/CM2 | | 4.33 MW/CM2 | | 4.33 MW/CM2 | | 4.33 MW/CM2 | | 4.33 MW/CM2 | |
| RICHARDSON NO. | (4M) | (16M) | (4M) | (16M) | (4M) | (16M) | (4M) | (16M) | (4M) | (16M) | (4M) | (16M) |
| (1/L)*10 | (39.192M) | (OBSERVED DATA): | (39.192M) | (OBSERVED DATA): | (39.192M) | (OBSERVED DATA): | (39.192M) | (OBSERVED DATA): | (39.192M) | (OBSERVED DATA): | (39.192M) | (OBSERVED DATA): |
| USTAR | (4M) | (16M) | (4M) | (16M) | (4M) | (16M) | (4M) | (16M) | (4M) | (16M) | (4M) | (16M) |
| HEIGHT (M) | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE |
| 1.0 | 3.89 | 8.0 | 8.3 | 4.14 | 7.4 | 7.3 | 3.65 | 10.2 | 3.65 | 10.2 | 4.9 | |
| 2.0 | 4.37 | 7.3 | 7.2 | 4.62 | 6.2 | 6.0 | 4.00 | 8.7 | 4.00 | 8.7 | 4.5 | |
| 4.0 | 4.91 | 6.6 | 6.2 | 5.15 | 5.1 | 4.9 | 4.39 | 7.5 | 4.39 | 7.5 | 4.2 | |
| 8.0 | 5.52 | 6.0 | 5.4 | 5.75 | 4.3 | 4.1 | 4.81 | 6.4 | 4.81 | 6.4 | 3.9 | |
| 16.0 | 6.19 | 5.5 | 4.7 | 6.42 | 3.6 | 3.4 | 5.27 | 5.5 | 5.27 | 5.5 | 3.6 | |
| 32.0 | 6.96 | 5.0 | 4.1 | 7.16 | 3.0 | 2.8 | 5.77 | 4.7 | 5.77 | 4.7 | 3.3 | |
| 48.0 | 7.45 | 4.7 | 3.7 | 7.63 | 2.7 | 2.5 | 6.09 | 4.3 | 6.09 | 4.3 | 3.2 | |
| DU/DZ | DTM/DZ | BU*100 | RI | DU/DZ | DTM/DZ | BU*100 | RI | DU/DZ | DTM/DZ | BU*100 | RI | |
| 4.0 | .1905 | | | .1884 | | | | .1343 | | | | |
| 8.0 | .1070 | | | .1051 | | | | .0736 | | | | |
| 16.0 | .0601 | | | .0586 | | | | .0403 | | | | |
| 39.2* | .0344 | | | .0325 | | | | .0200 | | | | |

* OBSERVED DATA

| | DATE 18/03/77 | TIME 10:00:00 | DATE 18/03/77 | TIME 11:00:00 | DATE 18/03/77 | TIME 12:00:00 |
|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| CLOUD (TENTHS) | WEATHER | | WEATHER | | WEATHER | |
| | TEMP DEG C | 0.4 | TEMP DEG C | 0.8 | TEMP DEG C | 2.8 |
| | DEW POINT DEG C | -7.7 | DEW POINT DEG C | -7.2 | DEW POINT DEG C | -7.8 |
| | VISIBILITY (MI) | 50 | VISIBILITY (MI) | 50 | VISIBILITY (MI) | 50 |
| | LOW 2 MID HI | TOTAL | 2:LOW 4 MID HI | TOTAL | 4:LOW 6 MID HI | TOTAL |
| CLOUD HT (M) | LOW 1220 MID | HI | LOW 1220 MID | HI | LOW 1525 MID | HI |
| EXPONENTS | A = -.17 | B = .14 | P = .10 | A = -.15 | B = .22 | P = .13 |
| NET RADIATION | 32.66 MW/CM2 | | 43.89 MW/CM2 | | 54.59 MW/CM2 | |
| RICHARDSON NO. | (4M) -.50 | (8M) -1.46 | (16M) -3.19 | (4M) -.24 | (8M) -.69 | (16M) -1.54 |
| | (39.192M) .00 | (OBSERVED DATA) | (39.192M) .03 | (OBSERVED DATA) | (39.192M) .35 | (OBSERVED DATA) |
| (1/L)*10 | (4M) -1.35 | (8M) -1.94 | (16M) -2.10 | (4M) -.67 | (8M) -.92 | (16M) -1.02 |
| USTAR | (4M) -.2050 | (8M) .2098 | (16M) .2120 | (4M) .2394 | (8M) .2446 | (16M) .2510 |
| | | | | (4M) .3326 | (8M) .3337 | (16M) .3339 |

| HEIGHT (M) | WD :(DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|--------------|-------------|-------------|---------------|---------------|-------------|-------------|-------------|---------------|---------------|-------------|-------------|-------------|---------------|---------------|
| 1. | : | | .58 | | | : | | 1.96 | | | : | | 2.92 | | |
| 2. | : 328. | 1.98 | .42 | 16.9 | | : 308. | 2.50 | 1.94 | 16.8 | | : 333. | 3.57 | 2.71 | 11.8 | : |
| 4. | : 320. | 2.39 | .31 | 16.2 | | : 298. | 2.98 | 1.93 | 15.4 | | : 324. | 4.20 | 2.36 | 11.5 | : |
| 8. | : 313. | 2.43 | .02 | 14.6 | | 6.3: 292. | 3.04 | 1.54 | 14.5 | 6.7: 317. | 6.6: 320. | 4.32 | 2.16 | 10.5 | 6.6: |
| 16. | : 313. | 2.61 | -.11 | 11.8 | | 7.1: 294. | 3.22 | 1.25 | 12.6 | 6.9: 320. | 7.6: 324. | 4.76 | 1.96 | 9.8 | 7.6: |
| 32. | : 316. | 2.68 | -.50 | 10.6 | | 8.0: 299. | 3.56 | .71 | 10.5 | 8.3: 324. | 8.9: 327. | 4.98 | 1.41 | 8.9 | 8.8: |
| 48. | : 308. | 2.85 | -.66 | 10.3 | | 8.0: 296. | 4.02 | .56 | 11.0 | 10.1: 321. | 7.7: 324. | 5.49 | 1.41 | 10.2 | 7.7: |

| HEIGHT (M) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : |
|--------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|-----------------|
| 1.0 : | 1.96 : | .48 : | 19.9 : | 4.8 : | 2.35 : | 2.01 : | 19.0 : | 4.0 : | 3.39 : | 2.75 : | 12.4 : | 6.0 : |
| 2.0 : | 2.10 : | .43 : | 17.6 : | 5.3 : | 2.50 : | 1.95 : | 17.1 : | 4.7 : | 3.68 : | 2.68 : | 11.8 : | 6.2 : |
| 4.0 : | 2.24 : | .33 : | 15.6 : | 5.8 : | 2.80 : | 1.83 : | 15.4 : | 5.5 : | 4.00 : | 2.54 : | 11.2 : | 6.5 : |
| 8.0 : | 2.40 : | .15 : | 13.9 : | 6.4 : | 3.07 : | 1.61 : | 13.9 : | 6.4 : | 4.35 : | 2.28 : | 10.7 : | 6.8 : |
| 16.0 : | 2.57 : | -.15 : | 12.3 : | 7.1 : | 3.35 : | 1.23 : | 12.5 : | 7.4 : | 4.73 : | 1.86 : | 10.1 : | 7.0 : |
| 32.0 : | 2.75 : | -.54 : | 10.9 : | 7.8 : | 3.66 : | .72 : | 11.2 : | 8.7 : | 5.14 : | 1.39 : | 9.6 : | 7.3 : |
| 48.0 : | 2.86 : | -.64 : | 10.2 : | 8.2 : | 3.86 : | .56 : | 10.6 : | 9.5 : | 5.40 : | 1.42 : | 9.4 : | 7.5 : |
| : | DU/DZ : | DT/H/DZ : | BU*100 : | RI : | DU/DZ : | DT/H/DZ : | BU*100 : | RI : | DU/DZ : | DT/H/DZ : | BU*100 : | RI : |

A-119

OBSERVED DATA

| DATE 18/03/77 TIME 13:00:00 : DATE 18/03/77 TIME 14:00:00 : DATE 18/03/77 TIME 15:00:00 : | | | | | | | | | |
|---|----------------------------------|-----------------|-----------------------------------|-----------------|----------------------------------|-----------------|----------------------------------|-----------------|-------|
| WEATHER : WEATHER : WEATHER : | | | | | | | | | |
| TEMP DEG C | 4.1 | TEMP DEG C | 4.6 | TEMP DEG C | 3.9 | TEMP DEG C | 3.9 | TEMP DEG C | 3.9 |
| DEW POINT DEG C | -8.3 | DEW POINT DEG C | -9.8 | DEW POINT DEG C | -9.4 | DEW POINT DEG C | -9.4 | DEW POINT DEG C | -9.4 |
| VISIBILITY (MI) | 50 | VISIBILITY (MI) | 50 | VISIBILITY (MI) | 50 | VISIBILITY (MI) | 50 | VISIBILITY (MI) | 50 |
| CLD (TENTHS) | LOW 6 MID HI | TOTL | 6:LOW 4 MID 1 HI | TOTL | 5:LOW 2 MID 8 HI | TOTL | 5:LOW 2 MID 8 HI | TOTL | 9: |
| CLD HT (M) | LOW 1525 MID HI | | LOW 1525 MID 3050 HI | | LOW 1525 MID 3050 HI | | LOW 1525 MID 3050 HI | | |
| EXPONENTS | A= .01 B= -.02 P= .12 | | A= -.14 B= .10 P= .09 | | A= -.10 B= .25 P= .08 | | A= -.10 B= .25 P= .08 | | |
| NET RADIATION | 47.52 MW/CM2 | | 34.47 MW/CM2 | | 35.17 MW/CM2 | | 35.17 MW/CM2 | | |
| RICHARDSON NO. | (4M) -.35 (8M) -.98 (16M) -2.00 | | (4M) -.37 (8M) -1.10 (16M) -2.44 | | (4M) -.30 (8M) -.89 (16M) -1.94 | | (4M) -.30 (8M) -.89 (16M) -1.94 | | |
| (1/L)*10 | (39.192M) .99 (OBSERVED DATA): | | (39.192M) -5.64 (OBSERVED DATA): | | (39.192M) -4.20 (OBSERVED DATA): | | (39.192M) -4.20 (OBSERVED DATA): | | |
| USTAR | (4M) -.95 (8M) -1.31 (16M) -1.32 | | (4M) -1.01 (8M) -1.47 (16M) -1.61 | | (4M) -.83 (8M) -1.19 (16M) -1.28 | | (4M) -.83 (8M) -1.19 (16M) -1.28 | | |
| | (4M).2597 (8M).2657 (16M).2688 | | (4M).2875 (8M).2909 (16M).2923 | | (4M).2940 (8M).2939 (16M).2919 | | (4M).2940 (8M).2939 (16M).2919 | | |
| WEATHER : WEATHER : WEATHER : | | | | | | | | | |
| WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | | | | | | | | | |
| HEIGHT (M) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) |
| 1. | 322. | 2.64 | 3.53 | 322. | 2.64 | 3.53 | 322. | 2.64 | 3.53 |
| 2. | 313. | 3.11 | 3.18 | 313. | 3.11 | 3.18 | 313. | 3.11 | 3.18 |
| 4. | 306. | 3.14 | 2.86 | 306. | 3.14 | 2.86 | 306. | 3.14 | 2.86 |
| 8. | 308. | 3.48 | 2.60 | 308. | 3.48 | 2.60 | 308. | 3.48 | 2.60 |
| 16. | 314. | 3.67 | 1.87 | 314. | 3.67 | 1.87 | 314. | 3.67 | 1.87 |
| 32. | 308. | 4.05 | 1.96 | 308. | 4.05 | 1.96 | 308. | 4.05 | 1.96 |
| 48. | | | | | | | | | |

LEAST SQUARES FITTED DATA

| DATE 18/03/77 TIME 13:00:00 : DATE 18/03/77 TIME 14:00:00 : DATE 18/03/77 TIME 15:00:00 : | | | | | | | | | |
|---|-------|--------|--------|-------|-------|--------|--------|-------|-------|
| WEATHER : WEATHER : WEATHER : | | | | | | | | | |
| WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | | | | | | | | | |
| HEIGHT (M) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) |
| 1.0 | 322. | 2.50 | 3.48 | 21.1 | 9.5 | 2.86 | 3.98 | 19.2 | 8.5 |
| 2.0 | 313. | 2.71 | 3.39 | 21.2 | 9.3 | 3.04 | 3.91 | 17.4 | 9.1 |
| 4.0 | 306. | 2.95 | 3.24 | 21.3 | 9.2 | 3.24 | 3.79 | 15.7 | 9.8 |
| 8.0 | 308. | 3.20 | 2.95 | 21.4 | 9.0 | 3.46 | 3.55 | 14.2 | 10.5 |
| 16.0 | 314. | 3.48 | 2.47 | 21.4 | 8.9 | 3.68 | 3.16 | 12.9 | 11.3 |
| 32.0 | 308. | 3.78 | 1.93 | 21.5 | 8.8 | 3.93 | 2.68 | 11.7 | 12.2 |
| 48.0 | | 3.96 | 1.94 | 21.6 | 8.7 | 4.08 | 2.60 | 11.0 | 12.7 |
| DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : | | | | | | | | | |
| 4.0 | .0813 | -.0646 | -.422 | -.10 | .0689 | -.0497 | -.267 | -.09 | .0645 |
| 8.0 | .0442 | -.0538 | -1.192 | -.98 | .0367 | -.0419 | -.795 | -.33 | .0342 |
| 16.0 | .0240 | -.0323 | -2.430 | -4.43 | .0196 | -.0263 | -1.761 | -2.20 | .0181 |
| 39.2* | .0237 | .0156 | 5.796 | .00 | .0069 | -.0075 | -2.610 | -6.56 | .0056 |

* OBSERVED DATA

OBSERVED DATA

| DATE 21/03/77 TIME 09:00:00 | | | | DATE 21/03/77 TIME 10:00:00 | | | | DATE 21/03/77 TIME 11:00:00 | | | |
|-----------------------------|----------------|-----------------|----------------|-----------------------------|----------------|-----------------|----------------|-----------------------------|----------------|-----------------|----------------|
| WEATHER | | | | WEATHER | | | | WEATHER | | | |
| TEMP DEG C | 2.8 | | | TEMP DEG C | 3.9 | | | TEMP DEG C | 7.8 | | |
| DEW POINT DEG C | -6.7 | | | DEW POINT DEG C | -6.7 | | | DEW POINT DEG C | -7.2 | | |
| VISIBILITY (MI) | 70 | | | VISIBILITY (MI) | 70 | | | VISIBILITY (MI) | 70 | | |
| CLD (TENTHS) | LOW | HI | TOTL | CLD (TENTHS) | LOW | HI | TOTL | CLD (TENTHS) | LOW | HI | TOTL |
| CLD HT (M) | LOW | MID | HI | CLD HT (M) | LOW | MID | HI | CLD HT (M) | LOW | MID | HI |
| EXPONENTS | A = -.06 | B = .06 | P = .08 | EXPONENTS | A = -.18 | B = .18 | P = .04 | EXPONENTS | A = -.22 | B = .10 | P = -.05 |
| NET RADIATION | 18.84 | MW/CM2 | | NET RADIATION | 29.21 | MW/CM2 | | NET RADIATION | 36.28 | MW/CM2 | |
| RICHARDSON NO. | (4M)-6.76 | (8M)-19.5 | (16M)-37.1 | RICHARDSON NO. | (4M)-10.3 | (8M)-33.6 | (16M)-83.3 | RICHARDSON NO. | (4M)-7.92 | (8M)-29.9 | (16M)-93.7 |
| (1/L)*10 | (39.192M) 5.36 | (OBSERVED DATA) | (39.192M)-6.28 | (OBSERVED DATA) | (39.192M)-6.28 | (OBSERVED DATA) | (39.192M)-6.28 | (OBSERVED DATA) | (39.192M)-6.64 | (OBSERVED DATA) | (39.192M)-6.64 |
| USTAR | (4M)-17.7 | (8M)-25.5 | (16M)-24.3 | USTAR | (4M)-27.0 | (8M)-22.0 | (16M)-54.5 | USTAR | (4M)-20.8 | (8M)-39.1 | (16M)-61.3 |
| | (4M)-1.082 | (8M)-.1194 | (16M)-.0969 | | (4M)-.1942 | (8M)-.2208 | (16M)-.2339 | | (4M)-.1428 | (8M)-.1587 | (16M)-.1743 |
| HEIGHT (M) | | | | HEIGHT (M) | | | | HEIGHT (M) | | | |
| WD | WS | TEMP | SIGA | WD | WS | TEMP | SIGA | WD | WS | TEMP | SIGA |
| (DEG) | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (C) | (DEG) |
| 1. | | 2.15 | | | | 5.42 | | | | 6.37 | |
| 2. | 144. | .67 | 2.05 | 25.1 | 77. | 1.10 | 5.22 | 43.1 | 5. | .88 | 6.32 |
| 4. | 141. | .75 | 2.25 | 25.4 | 66. | 1.21 | 5.25 | 42.0 | | .97 | 6.16 |
| 8. | 133. | .79 | 1.59 | 27.0 | 62. | 1.12 | 4.77 | 40.5 | | .91 | 6.02 |
| 16. | 147. | .84 | 1.48 | 20.7 | 65. | 1.23 | 4.59 | 34.5 | | .92 | 5.85 |
| 32. | 156. | .83 | 1.30 | 19.9 | 51. | 1.21 | 4.30 | 29.2 | | .87 | 5.58 |
| 48. | 158. | .91 | 1.20 | 23.5 | 54. | 1.33 | 3.98 | 23.9 | | .75 | 5.25 |
| | | | | 28.3 | | | | 28.9 | | | 29.5 |
| | | | | | | | | | | | 36.5 |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | | | | HEIGHT (M) | | | | HEIGHT (M) | | | |
|------------|-------|--------|---------|------------|-------|--------|---------|------------|--------|--------|---------|
| WD | WS | TEMP | SIGA | WD | WS | TEMP | SIGA | WD | WS | TEMP | SIGA |
| (M/S) | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (C) | (DEG) |
| 1.0 | .65 | 2.15 | 27.1 | 24.2 | 1.08 | 5.32 | 53.3 | 15.3 | .98 | 6.31 | 60.6 |
| 2.0 | .69 | 2.10 | 26.0 | 25.3 | 1.11 | 5.26 | 47.1 | 17.3 | .95 | 6.28 | 51.9 |
| 4.0 | .73 | 2.00 | 24.9 | 26.4 | 1.15 | 5.16 | 41.6 | 19.6 | .92 | 6.21 | 44.4 |
| 8.0 | .78 | 1.82 | 23.9 | 27.5 | 1.18 | 4.96 | 36.7 | 22.1 | .89 | 6.09 | 38.0 |
| 16.0 | .82 | 1.52 | 22.9 | 28.7 | 1.22 | 4.63 | 32.4 | 24.9 | .86 | 5.87 | 32.5 |
| 32.0 | .87 | 1.20 | 21.9 | 29.9 | 1.26 | 4.18 | 28.6 | 28.2 | .84 | 5.51 | 27.8 |
| 48.0 | .90 | 1.24 | 21.4 | 30.7 | 1.28 | 4.03 | 26.6 | 30.3 | .82 | 5.28 | 25.4 |
| | | | | | | | | | | | 37.5 |
| DU/DZ | | | | DU/DZ | | | | DU/DZ | | | |
| BU*100 | RI | | | BU*100 | RI | | | BU*100 | RI | | |
| 4.0 | .0140 | -.0371 | -3.949 | -.95 | .0117 | -.0402 | -1.722 | -.06 | -.0097 | -.0212 | -1.400 |
| 8.0 | .0074 | -.0300 | -11.401 | -6.31 | .0060 | -.0343 | -5.545 | -1.51 | -.0047 | -.0188 | -5.305 |
| 16.0 | .0039 | -.0158 | -21.474 | -64.47 | .0031 | -.0227 | -13.810 | -26.67 | -.0023 | -.0141 | -16.982 |
| 39.2* | .0050 | .0037 | 27.429 | .00 | .0075 | -.0100 | -33.975 | ***** | -.0075 | -.0106 | -86.200 |
| | | | | | | | | | | | ***** |

* OBSERVED DATA

OBSERVED DATA

| | DATE 21/03/77 | TIME 12:00:00 | DATE 21/03/77 | TIME 13:00:00 | DATE 21/03/77 | TIME 14:00:00 | | | | | | |
|----------------|---|---------------|-----------------|---------------|-----------------|---------------|------|----------|------------|------------|-------|------|
| | WEATHER | | WEATHER | | WEATHER | | | | | | | |
| | TEMP DEG C | 8.9 | TEMP DEG C | 9.4 | TEMP DEG C | 10.0 | | | | | | |
| | DEW POINT DEG C | -7.8 | DEW POINT DEG C | -7.8 | DEW POINT DEG C | -7.8 | | | | | | |
| | VISIBILITY (MI) | 70 | VISIBILITY (MI) | 70 | VISIBILITY (MI) | 70 | | | | | | |
| CLD (TENTHS) | LOW | MID | HI | TOTL | LOW | MID | HI | TOTL | | | | |
| CLD HT (M) | LOW | MID | HI | TOTL | LOW | MID | HI | TOTL | | | | |
| EXPONENTS | A = | -0.07 | R = | .18 | P = | .04 | A = | -0.13 | B = | .06 | P = | .05 |
| NET RADIATION | 39.91 MW/CM2 | | | | | | | | | | | |
| RICHARDSON NO. | (4M)-6.22 (8M)-20.1 (16M)-49.3 : (4M)-4.81 (8M)-15.0 (16M)-32.6 : (4M)-1.64 (8M)-4.66(16M)-7.17 : (39.192M)-8.29 (OBSERVED DATA) : (39.192M) .44 (OBSERVED DATA) : (39.192M) 4.99 (OBSERVED DATA) : | | | | | | | | | | | |
| (1/L)*10 | (4M)-16.3 (8M)-26.4 (16M)-32.2 : (4M)-12.6 (8M)-19.6 (16M)-21.3 : (4M)-4.35 (8M)-6.13 (16M)-4.71 : | | | | | | | | | | | |
| USTAR | (4M).1950 (8M).2037 (16M).2092 : (4M).2473 (8M).2669 (16M).2652 : (4M).2279 (8M).2340 (16M).2180 : | | | | | | | | | | | |
| HEIGHT (M) | WD | WS | TEMP (C) | SIGA (DEG) | SIGA (DEG) | WD | WS | TEMP (C) | SIGA (DEG) | SIGA (DEG) | | |
| 1. | | | 7.92 | | | | | 9.50 | | | 10.30 | |
| 2. | 272. | 1.24 | 7.92 | 71.1 | | | | 9.35 | 46.4 | | 10.14 | 46.0 |
| 4. | 260. | 1.33 | 7.85 | 67.6 | | 116. | 1.69 | 9.00 | 44.4 | | 9.77 | 46.5 |
| 8. | 246. | 1.28 | 7.44 | 60.2 | | 108. | 1.86 | 8.59 | 37.0 | | 9.49 | 46.9 |
| 16. | 224. | 1.34 | 7.44 | 54.2 | 20.0 | 104. | 1.94 | 8.50 | 30.6 | 18.6 | 9.43 | 44.9 |
| 32. | 211. | 1.36 | 7.21 | 53.3 | 30.4 | 100. | 2.10 | 8.12 | 31.7 | 18.9 | 9.23 | 36.6 |
| 48. | 197. | 1.45 | 6.93 | 63.2 | 27.5 | 112. | 2.07 | 7.98 | 32.6 | 18.6 | 9.33 | 28.1 |
| | | | | | 29.5 | 113. | 1.91 | | | 21.3 | | 23.7 |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|---|----------|----------|------------|------------|----------|----------|------------|------------|
| 1.0 | 1.22 | 7.89 | 71.7 | 15.3 | 1.72 | 9.33 | 50.3 | 16.2 |
| 2.0 | 1.25 | 7.86 | 68.5 | 17.3 | 1.78 | 9.26 | 45.8 | 16.9 |
| 4.0 | 1.28 | 7.79 | 65.4 | 19.6 | 1.84 | 9.12 | 41.8 | 17.5 |
| 8.0 | 1.32 | 7.66 | 62.5 | 22.3 | 1.90 | 8.86 | 38.1 | 18.2 |
| 16.0 | 1.35 | 7.43 | 59.7 | 25.2 | 1.96 | 8.45 | 34.7 | 19.0 |
| 32.0 | 1.39 | 7.11 | 57.0 | 28.6 | 2.02 | 7.99 | 31.7 | 19.8 |
| 48.0 | 1.41 | 6.97 | 55.5 | 30.8 | 2.06 | 8.03 | 30.0 | 20.2 |
| DU/DZ DTH/DZ BU*100 RI DU/DZ DTH/DZ BU*100 RI | | | | | | | | |
| 4.0 | .0113 | -.0228 | -.775 | -.07 | .0200 | -.0554 | -.914 | -.10 |
| 8.0 | .0058 | -.0194 | -2.505 | -.34 | .0103 | -.0457 | -2.825 | -.43 |
| 16.0 | .0030 | -.0127 | -6.207 | -5.49 | .0053 | -.0263 | -6.095 | -5.24 |
| 39.2* | .0056 | -.0075 | -20.539 | -31.34 | -.0100 | .0012 | 1.676 | .00 |

* OBSERVED DATA

OBSERVED DATA

```

: DATE 21/03/77 TIME 15:00:00 :
: WEATHER :
: TEMP DEG C 11.1 :
: DEW POINT DEG C -6.7 :
: VISIBILITY (MI) 60 :
CLD (TENTHS) : LOW MID HI TOTL 0:
CLD HT (M) : LOW MID HI :
EXPONENTS : A= -.02 B= .16 P= .116** :
NET RADIATION : 26.65 MW/CM2 :
RICHARDSON NO. : (4M) -1.83* (8M) -.60* (16M) -62.1 :
: (39.192M) -.87 (OBSERVED DATA):
(1/L)*10 : (4M) -4.85* (8M) -.809* (16M) -40.6 :
USTAR : (4M) .1645* (8M) .1228* (16M) .2622 :

```

```

: WD WS TEMP SIGA SIGE :
HEIGHT (M) : (DEG) (M/S) (C) (DEG) (DEG):
-----
1. : 11.00 :
2. : 5. 1.35 10.89 59.6 :
4. : 358. 1.50 10.50 58.3 :
8. : 346. 1.56 10.44 59.2 22.1:
16. : 348. 1.72 10.31 54.3 21.0:
32. : 346. 1.62 9.91 53.4 22.4:
48. : 317. 1.46 9.71 57.6 30.8:

```

LEAST SQUARES FITTED DATA

```

: WS TEMP SIGA SIGE :
HEIGHT (M) : (M/S) (C) (DEG) (DEG) :
-----
1.0 : 1.41 10.85 60.4 14.7 :
2.0 : 1.44 10.81 59.4 16.4 :
4.0 : 1.48 10.71 58.4 18.3 :
8.0 : 1.51 10.54 57.4 20.4 :
16.0 : 1.55 10.25 56.5 22.8 :
32.0 : 1.59 9.86 55.5 25.4 :
48.0 : 1.61 9.73 55.0 27.1 :

```

```

: DU/DZ DTH/DZ BU*100 RI :
-----
4.0 : .0120 -.0338 -.854 -.07 :
8.0 : .0062 -.0286 -2.761 -.43 :
16.0 : .0032 -.0184 -6.765 -6.52 :
39.2* : -.0100 -.0025 -5.549 -64.66 :

```

* OBSERVED DATA ** OBSERVED DATA
FOR 2-16M

OBSERVED DATA

| HEIGHT (M) | : WD :(DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------------|-------------|-------------|---------------|---------------|-------------|-------------|-------------|---------------|---------------|-------------|-------------|-------------|---------------|---------------|
| 1. | : | | 6.05 | | | : | | 3.29 | | | : | | 2.84 | | |
| 2. | : 148. | 1.49 | 6.95 | 2.4 | | : 183. | 1.36 | 4.28 | 2.8 | | : 128. | 1.78 | 3.29 | 13.4 | : |
| 4. | : 147. | 2.32 | 8.03 | 2.1 | | : 176. | 1.94 | 5.41 | 5.6 | | : 123. | 2.37 | 3.82 | 12.2 | : |
| 8. | : 146. | 3.10 | 9.26 | 1.3 | | .3: 170. | 2.08 | 6.15 | 4.0 | | .7: 125. | 2.81 | 4.74 | 11.5 | 2.4: |
| 16. | : 142. | 3.61 | 9.80 | 2.3 | | .3: 156. | 2.55 | 7.00 | 4.0 | | 1.3: 125. | 2.92 | 5.15 | 10.2 | 2.7: |
| 32. | : 145. | 3.92 | 9.83 | 1.9 | | .6: 150. | 3.99 | 9.14 | 2.6 | | .9: 125. | 3.40 | 5.39 | 10.6 | 3.9: |
| 48. | : 143. | 4.24 | 9.76 | 1.7 | | .7: 146. | 4.18 | 9.46 | 1.9 | | .9: 117. | 4.37 | 5.87 | 9.2 | 4.0: |

LEAST SQUARES FITTED DATA

| HEIGHT (M) : | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|--------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1.0 : | 1.41 | 6.89 | 2.2 | .1 | 1.08 | 3.99 | 5.1 | .8 | 1.59 | 3.26 | 14.2 | 1.2 |
| 2.0 : | 1.75 | 7.13 | 2.1 | .1 | 1.38 | 4.26 | 4.5 | .8 | 1.88 | 3.41 | 13.2 | 1.5 |
| 4.0 : | 2.16 | 7.58 | 2.0 | .2 | 1.75 | 4.78 | 3.9 | .9 | 2.22 | 3.68 | 12.3 | 1.9 |
| 8.0 : | 2.68 | 8.39 | 1.9 | .2 | 2.24 | 5.74 | 3.5 | .9 | 2.63 | 4.19 | 11.5 | 2.3 |
| 16.0 : | 3.32 | 9.64 | 1.9 | .4 | 2.85 | 7.33 | 3.0 | .9 | 3.12 | 5.01 | 10.7 | 2.9 |
| 32.0 : | 4.11 | 10.58 | 1.8 | .5 | 3.63 | 9.22 | 2.7 | .9 | 3.69 | 5.87 | 9.9 | 3.6 |
| 48.0 : | 4.65 | 9.47 | 1.8 | .7 | 4.18 | 9.40 | 2.5 | 1.0 | 4.07 | 5.69 | 9.5 | 4.1 |

| | DU/DZ | DTH/DZ | BU#100 | RI | DU/DZ | DTH/DZ | BU#100 | RI | DU/DZ | DTH/DZ | BU#100 | RI |
|-------|-------|--------|--------|-----|-------|--------|--------|-----|-------|--------|--------|-----|
| 4.0 | .1553 | .2212 | 2.638 | .00 | .1431 | .2558 | 4.690 | .00 | .1256 | .1405 | 1.610 | .00 |
| 8.0 | .0961 | .1812 | 5.620 | .00 | .0912 | .2223 | 10.004 | .00 | .0743 | .1203 | 3.927 | .00 |
| 16.0 | .0595 | .1010 | 8.142 | .00 | .0581 | .1552 | 17.112 | .00 | .0440 | .0799 | 7.422 | .00 |
| 39.2* | .0200 | .0056 | 1.812 | .00 | .0119 | .0300 | 9.626 | .00 | .0606 | .0400 | 14.677 | .00 |

* OBSERVED DATA

OBSERVED DATA

| | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------|-------------------|---------------|-------------------|------------------|-------------------|---------------|---------|------------------|---------|-----------|---------|------------------|---------|-----------|------|------------------|---------|-----------|-------|------------------|------|-------|-------|--------|
| | : DATE 22/03/77 | TIME 01:00:00 | : DATE 22/03/77 | TIME 02:00:00 | : DATE 22/03/77 | TIME 03:00:00 | : | | | | | | | | | | | | | | | | | |
| | : WEATHER | : | : WEATHER | : | : WEATHER | : | | | | | | | | | | | | | | | | | | |
| | : TEMP DEG C | 0.0 | : TEMP DEG C | -3.3 | : TEMP DEG C | -2.8 | | | | | | | | | | | | | | | | | | |
| | : DEW POINT DEG C | -9.4 | : DEW POINT DEG C | -10.5 | : DEW POINT DEG C | -10.0 | | | | | | | | | | | | | | | | | | |
| | : VISIBILITY (MI) | 20 | : VISIBILITY (MI) | 20 | : VISIBILITY (MI) | 20 | | | | | | | | | | | | | | | | | | |
| CLD (TENTHS) | :LOW | HI | TOTL | :LOW | HI | TOTL | 0: | | | | | | | | | | | | | | | | | |
| CLD HT (M) | :LOW | MID | HI | :LOW | MID | HI | : | | | | | | | | | | | | | | | | | |
| EXPONENTS | : A = | -0.47 | B=-1.04 | P= .44 | : A = | -0.66 | B=-1.05 | P= .45 | : A = | -0.43 | B=-0.68 | P= .31 | | | | | | | | | | | | |
| NET RADIATION | : | -7.61 | MM/CM2 | : | : | -7.61 | MM/CM2 | : | : | -7.61 | MM/CM2 | : | | | | | | | | | | | | |
| RICHARDSON NO.: | (4M) | .14 | (8M) | .28 | (16M) | .46 | : | (4M) | .15 | (8M) | .29 | (16M) | .53 | : | (4M) | .25 | (8M) | .58 | (16M) | 1.21 | : | | | |
| | : | (39.192M) | .46 | (OBSERVED DATA): | : | (39.192M) | .34 | (OBSERVED DATA): | : | (39.192M) | 2.39 | (OBSERVED DATA): | : | (39.192M) | 2.39 | (OBSERVED DATA): | : | (39.192M) | 2.39 | (OBSERVED DATA): | : | | | |
| (1/L)*10 | (4M) | 1.12 | (8M) | 1.77 | (16M) | 2.27: | (4M) | 1.16 | (8M) | 1.94 | (16M) | 2.91: | (4M) | 2.87 | (8M) | 7.05 | (16M) | 14.40: | (4M) | 2.87 | (8M) | 7.05 | (16M) | 14.40: |
| USTAR | (4M) | 1.227 | (8M) | 1.176 | (16M) | 1.181: | (4M) | 1.160 | (8M) | 1.125 | (16M) | 1.063: | (4M) | 1.048 | (8M) | 0.774 | (16M) | 0.556: | (4M) | 1.048 | (8M) | 0.774 | (16M) | 0.556: |
| | : WS | TEMP | SIGA | SIGE | : WS | TEMP | SIGA | SIGE | : WS | TEMP | SIGA | SIGE | : WS | TEMP | SIGA | SIGE | : | | | | | | | |
| HEIGHT (M) | : (DEG) | (M/S) | (C) | (DEG) | : (DEG) | (M/S) | (C) | (DEG) | : (DEG) | (M/S) | (C) | (DEG) | : (DEG) | (M/S) | (C) | (DEG) | : (DEG) | : | | | | | | |
| 1. | : | -1.43 | : | : | : | -2.27 | : | : | : | -2.27 | : | : | : | -2.49 | : | : | : | : | | | | | | |
| 2. | : 114. | 1.71 | -1.13 | 5.0 | : 108. | 1.70 | -2.02 | 8.1 | : 91. | 1.95 | -2.15 | 5.8 | : | 91. | 1.95 | -2.15 | 5.8 | : | | | | | | |
| 4. | : 104. | 2.31 | -0.92 | 3.5 | : 100. | 2.19 | -1.97 | 6.0 | : 86. | 2.61 | -1.71 | 4.3 | : | 86. | 2.61 | -1.71 | 4.3 | : | | | | | | |
| 8. | : 106. | 3.10 | .47 | 3.6 | : 2.8: | 2.96 | -1.11 | 5.3 | : 3.2: | 3.13 | -0.36 | 3.5 | : | 95. | 3.13 | -0.36 | 3.5 | : | | | | | | |
| 16. | : 114. | 5.12 | 2.20 | 1.6 | : .7: | 4.89 | .85 | 2.4 | : 1.1: | 3.91 | .79 | 2.1: | : | 1.1: | 3.91 | .79 | 2.1: | : | | | | | | |
| 32. | : 134. | 5.50 | 3.56 | 2.6 | : .6: | 5.31 | 3.38 | 1.2 | : .4: | 4.67 | 2.35 | 1.2 | : | .4: | 4.67 | 2.35 | 1.2 | : | | | | | | |
| 48. | : 143. | 6.95 | 5.11 | .8 | : .4: | 7.03 | 4.99 | 1.2 | : .6: | 5.32 | 3.97 | 1.8 | : | .6: | 5.32 | 3.97 | 1.8 | : | | | | | | |

LEAST SQUARES FITTED DATA

| | | | | | | | | | | | | |
|---|-------|-------|--------|------|-------|-------|--------|------|-------|-------|--------|------|
| HEIGHT (M) : | WS | TEMP | SIGA | SIGE | WS | TEMP | SIGA | SIGE | WS | TEMP | SIGA | SIGE |
| 1.0 | 1.27 | -1.37 | 7.4 | 19.2 | 1.22 | -2.43 | 14.9 | 23.0 | 1.64 | -2.28 | 8.3 | 10.2 |
| 2.0 | 1.73 | -1.13 | 5.3 | 9.3 | 1.67 | -2.19 | 9.5 | 11.1 | 2.03 | -2.06 | 6.2 | 6.4 |
| 4.0 | 2.36 | -.65 | 3.8 | 4.5 | 2.28 | -1.74 | 6.0 | 5.4 | 2.51 | -1.63 | 4.6 | 4.0 |
| 8.0 | 3.20 | .24 | 2.8 | 2.2 | 3.11 | -.86 | 3.8 | 2.6 | 3.10 | -.81 | 3.4 | 2.5 |
| 16.0 | 4.36 | 1.80 | 2.0 | 1.1 | 4.24 | .74 | 2.4 | 1.3 | 3.84 | .62 | 2.6 | 1.6 |
| 32.0 | 5.93 | 4.00 | 1.4 | .5 | 5.79 | 3.30 | 1.5 | .6 | 4.75 | 2.74 | 1.9 | 1.0 |
| 48.0 | 7.10 | 4.96 | 1.2 | .3 | 6.95 | 5.03 | 1.2 | .4 | 5.37 | 3.83 | 1.6 | .7 |
| : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : | | | | | | | | | | | | |
| 4.0 | .2454 | .2386 | 2.475 | .00 | .2400 | .2325 | 2.592 | .00 | .1791 | .2178 | 1.997 | .00 |
| 8.0 | .1669 | .2145 | 4.794 | .00 | .1638 | .2161 | 5.155 | .00 | .1107 | .1979 | 4.731 | .00 |
| 16.0 | .1136 | .1664 | 7.994 | .00 | .1118 | .1834 | 9.336 | .00 | .0685 | .1580 | 9.827 | .00 |
| 39.2* | .0906 | .1069 | 15.323 | .00 | .1075 | .1106 | 16.229 | .00 | .0406 | .1113 | 24.619 | .00 |

* OBSERVED DATA

OBSERVED DATA

| | DATE 22/03/77 | TIME 04:00:00 | DATE 22/03/77 | TIME 05:00:00 | DATE 22/03/77 | TIME 06:00:00 | | | | | | | | | |
|----------------|---------------------------|-----------------|-----------------|---------------------------|-----------------|---------------|---------------------------|-----------------|-----------|------------|-----------------|-------|-------|-------|-------|
| | WEATHER | | | WEATHER | | | | | | | | | | | |
| | TEMP DEG C | -4.4 | TEMP DEG C | -5.0 | TEMP DEG C | -3.5 | | | | | | | | | |
| | DEW POINT DEG C | -10.5 | DEW POINT DEG C | -10.8 | DEW POINT DEG C | -9.4 | | | | | | | | | |
| | VISIBILITY (MI) | 20 | VISIBILITY (MI) | 20 | VISIBILITY (MI) | 30 | | | | | | | | | |
| CLD (TENTHS) | LOW | MID | HI | TOTL | LOW | MID | HI | TOTL | | | | | | | |
| CLD FT (M) | LOW | MID | HI | HI | LOW | MID | HI | HI | | | | | | | |
| EXPONENTS | A = -.30 B = -.93 P = .38 | | | A = -.39 B = -.56 P = .41 | | | A = -.59 B = -.84 P = .39 | | | | | | | | |
| NET RADIATION | -7.61 MW/CM2 | | | -7.61 MW/CM2 | | | -7.61 MW/CM2 | | | | | | | | |
| RICHARDSON NO. | (4M) | .12 (8M) | .25 (16M) | .46 | (4M) | .13 (8M) | .27 (16M) | .44 | (4M) | .11 (8M) | .24 (16M) | .46 | | | |
| | (39.192M)**** | (OBSERVED DATA) | (39.192M) | 1.51 | (OBSERVED DATA) | (39.192M) | 1.51 | (OBSERVED DATA) | (39.192M) | 2.14 | (OBSERVED DATA) | 2.29 | | | |
| (1/L)*10 | (4M) | .79 (8M) | 1.46 (16M) | 2.31 | (4M) | 1.01 (8M) | 1.66 (16M) | 2.08 | (4M) | .77 (8M) | 1.42 (16M) | 2.29 | | | |
| USTAR | (4M) | .1638 (8M) | .1508 (16M) | .1376 | (4M) | .1420 (8M) | .1329 (16M) | .1315 | (4M) | .1610 (8M) | .1482 (16M) | .1338 | | | |
| | WEATHER | | | | | | | | | | | | | | |
| HEIGHT (M) | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE |
| | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) |
| 1. | | | -2.05 | | | | | -2.51 | | | | | -2.91 | | |
| 2. | 118. | 2.24 | -1.81 | 10.2 | | 119. | 2.04 | -2.30 | 9.6 | | 127. | 2.17 | -2.73 | 8.2 | |
| 4. | 108. | 2.93 | -1.67 | 8.5 | | 109. | 2.62 | -2.16 | 7.3 | | 116. | 2.78 | -2.59 | 6.6 | |
| 8. | 109. | 3.97 | -.84 | 6.6 | 3.1 | 105. | 3.44 | -1.43 | 5.4 | 2.6 | 114. | 3.72 | -2.00 | 4.4 | 2.8 |
| 16. | 114. | 5.66 | .95 | 4.5 | 1.8 | 106. | 4.77 | .32 | 4.6 | 2.8 | 117. | 5.68 | -.01 | 1.8 | 1.3 |
| 32. | 127. | 6.93 | 3.13 | 6.2 | .5 | 116. | 7.10 | 2.98 | 2.8 | .8 | 128. | 7.06 | 2.01 | 1.8 | .5 |
| 48. | 138. | 6.89 | 4.18 | 3.2 | .8 | 119. | 6.84 | 3.00 | 3.0 | 1.3 | 138. | 6.47 | 3.16 | 1.4 | .8 |

LEAST SQUARES FITTED DATA

| DATE 22/03/77 TIME 04:00:00 : DATE 22/03/77 TIME 05:00:00 : DATE 22/03/77 TIME 06:00:00 : | | | | | | | | | | | | | | | |
|---|---------------------------|-------------------|-------------|-------------------------|---------------------------|------------|-------------|------------------------|---------------------------|------------|-------------------|------------------------|---------------------------|-------------------|-------------|
| WEATHER : | | | | WEATHER : | | | | WEATHER : | | | | WEATHER : | | | |
| TEMP DEG C -4.4 : | | | | TEMP DEG C -5.0 : | | | | TEMP DEG C -3.5 : | | | | TEMP DEG C -3.5 : | | | |
| DEW POINT DEG C -10.5 : | | | | DEW POINT DEG C -10.8 : | | | | DEW POINT DEG C -9.4 : | | | | DEW POINT DEG C -9.4 : | | | |
| VISIBILITY (MI) 20 : | | | | VISIBILITY (MI) 20 : | | | | VISIBILITY (MI) 30 : | | | | VISIBILITY (MI) 30 : | | | |
| CLD (TENTHS) : | LOW | MID | HI | TOTL | LOW | MID | HI | TOTL | LOW | MID | HI | TOTL | LOW | MID | HI |
| CLD FT (M) : | LOW | MID | HI | HI | LOW | MID | HI | HI | LOW | MID | HI | HI | LOW | MID | HI |
| EXPONENTS : | A = -.30 B = -.93 P = .38 | | | | A = -.39 B = -.56 P = .41 | | | | A = -.59 B = -.84 P = .39 | | | | A = -.59 B = -.84 P = .39 | | |
| NET RADIATION : | -7.61 MW/CM2 | | | | -7.61 MW/CM2 | | | | -7.61 MW/CM2 | | | | -7.61 MW/CM2 | | |
| RICHARDSON NO. : | (4M) | .12 (8M) | .25 (16M) | .46 | (4M) | .13 (8M) | .27 (16M) | .44 | (4M) | .11 (8M) | .24 (16M) | .46 | (4M) | .11 (8M) | .24 (16M) |
| (1/L)*10 : | (39.192M)**** | (OBSERVED DATA) : | (39.192M) | 1.51 | (OBSERVED DATA) : | (39.192M) | 1.51 | (OBSERVED DATA) : | (39.192M) | 2.14 | (OBSERVED DATA) : | (39.192M) | 2.14 | (OBSERVED DATA) : | (39.192M) |
| USTAR : | (4M) | .79 (8M) | 1.46 (16M) | 2.31 | (4M) | 1.01 (8M) | 1.66 (16M) | 2.08 | (4M) | .77 (8M) | 1.42 (16M) | 2.29 | (4M) | .77 (8M) | 1.42 (16M) |
| | (4M) | .1638 (8M) | .1508 (16M) | .1376 | (4M) | .1420 (8M) | .1329 (16M) | .1315 | (4M) | .1610 (8M) | .1482 (16M) | .1338 | (4M) | .1610 (8M) | .1482 (16M) |
| WEATHER : | | | | | | | | | | | | | | | |
| HEIGHT (M) : | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE |
| | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) |
| 1.0 | | 1.78 | -2.17 | 12.5 | 20.7 | | 1.51 | -2.76 | 12.5 | 9.3 | | 1.69 | -3.08 | 13.2 | 14.3 |
| 2.0 | | 2.31 | -1.94 | 10.1 | 10.9 | | 2.01 | -2.50 | 9.5 | 6.3 | | 2.21 | -2.86 | 8.7 | 8.0 |
| 4.0 | | 3.01 | -1.49 | 8.2 | 5.7 | | 2.67 | -2.00 | 7.3 | 4.3 | | 2.89 | -2.44 | 5.8 | 4.4 |
| 8.0 | | 3.91 | -.64 | 6.7 | 3.0 | | 3.56 | -1.07 | 5.6 | 2.9 | | 3.78 | -1.64 | 3.8 | 2.5 |
| 16.0 | | 5.08 | .86 | 5.4 | 1.6 | | 4.74 | .51 | 4.3 | 2.0 | | 4.94 | -.20 | 2.5 | 1.4 |
| 32.0 | | 6.61 | 3.07 | 4.4 | .8 | | 6.31 | 2.57 | 3.3 | 1.3 | | 6.45 | 1.96 | 1.7 | .8 |
| 48.0 | | 7.71 | 4.21 | 3.9 | .6 | | 7.47 | 3.15 | 2.8 | 1.1 | | 7.55 | 3.19 | 1.3 | .5 |
| WEATHER : | | | | | | | | | | | | | | | |
| | DU/DZ | DTH/DZ | BU*100 | RI | | DU/DZ | DTH/DZ | BU*100 | RI | | DU/DZ | DTH/DZ | BU*100 | RI | |
| 4.0 | .2663 | .2269 | 1.449 | .00 | | .2588 | .2481 | 2.011 | .00 | | .2611 | .2148 | 1.487 | .00 | |
| 8.0 | .1731 | .2062 | 3.104 | .00 | | .1724 | .2193 | 3.993 | .00 | | .1706 | .1965 | 3.177 | .00 | |
| 16.0 | .1126 | .1646 | 5.829 | .00 | | .1148 | .1617 | 6.597 | .00 | | .1114 | .1599 | 6.025 | .00 | |
| 39.2* | -.0025 | .0756 | 8.609 | .00 | | -.0162 | .0113 | 1.257 | .00 | | -.0369 | .0819 | 9.682 | .00 | |

* OBSERVED DATA

OBSERVED DATA

| | DATE 22/03/77 | TIME 07:03:00 | WEATHER | DATE 22/03/77 | TIME 08:00:00 | WEATHER | DATE 22/03/77 | TIME 09:00:00 | WEATHER | | | | | | | | | |
|---------------|---------------|---------------|---------|---------------|---------------|-----------|---------------|---------------|-----------|---------|---------|-------|------|-------|------|-------|-------|-------|
| CLD (TENTHS) | LOW | MID | HI | TOTAL | LOW | MID | HI | TOTAL | LOW | MID | HI | TOTAL | | | | | | |
| CLD HT (M) | LOW | MID | HI | TOTAL | LOW | MID | HI | TOTAL | LOW | MID | HI | TOTAL | | | | | | |
| EXPONENTS | A = -0.23 | B = -1.12 | P = .46 | | A = -0.18 | B = -0.15 | P = .11 | | A = -0.21 | B = .03 | P = .09 | | | | | | | |
| NET RADIATION | -6.91 MW/CM2 | | | | | | | | | | | | | | | | | |
| RICHARDSN NO. | (4M) | .09 | (8M) | .17 | (16M) | .27 | (4M) | -.33 | (8M) | -.92 | (16M) | -1.66 | (4M) | -.55 | (8M) | -1.61 | (16M) | -3.30 |
| (1/L)*10 | (4M) | .51 | (8M) | .72 | (16M) | .83 | (4M) | -.91 | (8M) | -1.23 | (16M) | -1.10 | (4M) | -1.49 | (8M) | -2.14 | (16M) | -2.18 |
| USTAR | (4M) | .1217 | (8M) | .1271 | (16M) | .1373 | (4M) | .2003 | (8M) | .2030 | (16M) | .2011 | (4M) | .2568 | (8M) | .2620 | (16M) | .2613 |

| HEIGHT (M) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|
| 1. | | | -1.70 | | | | | 2.55 | | | | | 7.43 | | |
| 2. | 145. | 1.56 | -1.50 | 7.6 | | 164. | 2.07 | 2.54 | 8.5 | | 143. | 2.54 | 7.28 | 12.5 | |
| 4. | 131. | 2.02 | -1.32 | 6.9 | | 154. | 2.33 | 2.54 | 7.9 | | 132. | 2.82 | 7.14 | 11.0 | |
| 8. | 125. | 2.72 | -.98 | 5.3 | 3.3 | 152. | 2.52 | 2.17 | 6.1 | 5.8 | 129. | 3.02 | 6.71 | 8.9 | 7.1 |
| 16. | 121. | 4.07 | -.08 | 3.9 | 1.9 | 151. | 2.63 | 1.94 | 5.1 | 5.9 | 129. | 3.19 | 6.40 | 7.4 | 7.4 |
| 32. | 129. | 5.68 | .96 | 3.8 | .5 | 153. | 2.79 | 1.79 | 5.8 | 5.3 | 133. | 3.37 | 6.16 | 7.0 | 7.6 |
| 48. | 136. | 6.38 | 1.31 | 4.1 | .6 | 151. | 3.07 | 1.69 | 4.7 | 4.3 | 132. | 3.41 | 5.98 | 6.5 | 7.5 |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|
| 1.0 | | | -1.69 | 8.8 | 35.2 | | | 1.96 | 2.57 | 9.5 | | | 7.33 | 14.3 | 6.6 |
| 2.0 | | | -1.57 | 7.5 | 16.2 | | | 2.11 | 2.52 | 8.4 | | | 7.26 | 12.3 | 6.8 |
| 4.0 | | | -1.33 | 6.4 | 7.5 | | | 2.28 | 2.43 | 7.4 | | | 7.12 | 10.7 | 7.0 |
| 8.0 | | | -.88 | 5.4 | 3.4 | | | 2.47 | 2.27 | 6.5 | | | 6.87 | 9.2 | 7.2 |
| 16.0 | | | -.11 | 4.6 | 1.6 | | | 2.66 | 2.00 | 5.8 | | | 6.47 | 8.0 | 7.3 |
| 32.0 | | | .94 | 3.9 | .7 | | | 2.88 | 1.70 | 5.1 | | | 6.01 | 6.9 | 7.5 |
| 48.0 | | | 1.32 | 3.6 | .5 | | | 3.01 | 1.72 | 4.7 | | | 6.04 | 6.3 | 7.6 |

| | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI |
|-------|-------|--------|--------|-----|-------|--------|--------|-------|-------|--------|--------|-------|
| 4.0 | .2261 | .1245 | 1.664 | .00 | .0587 | -.0321 | -.350 | -.06 | .0586 | -.0543 | -.393 | -.11 |
| 8.0 | .1559 | .1116 | 3.134 | .00 | .0317 | -.0259 | -.972 | -.62 | .0312 | -.0449 | -1.146 | -.58 |
| 16.0 | .1074 | .0857 | 5.051 | .00 | .0171 | -.0136 | -1.751 | -2.67 | .0166 | -.0260 | -2.348 | -3.30 |
| 39.2* | .0438 | .0319 | 4.868 | .00 | .0175 | .0038 | 2.415 | .00 | .0025 | -.0013 | -.587 | -.41 |

* OBSERVED DATA

OBSERVED DATA

| | | | | | |
|--|--|--|--|--|--|
| DATE 22/03/77 | TIME 10:00:00 | DATE 22/03/77 | TIME 11:00:00 | DATE 22/03/77 | TIME 12:00:00 |
| WEATHER | WEATHER | WEATHER | WEATHER | WEATHER | WEATHER |
| TEMP DEG C 10.0 | TEMP DEG C 13.3 | TEMP DEG C 15.0 | TEMP DEG C 13.3 | TEMP DEG C 15.0 | TEMP DEG C 15.0 |
| DEW POINT DEG C -5.6 | DEW POINT DEG C -5.6 | DEW POINT DEG C -6.7 | DEW POINT DEG C -5.6 | DEW POINT DEG C -6.7 | DEW POINT DEG C -6.7 |
| VISIBILITY (MI) 85 | VISIBILITY (MI) 85 | VISIBILITY (MI) 85 | VISIBILITY (MI) 85 | VISIBILITY (MI) 85 | VISIBILITY (MI) 85 |
| CLD (TENTHS) :LOW MID HI | CLD (TENTHS) :LOW MID HI | CLD (TENTHS) :LOW MID HI | CLD (TENTHS) :LOW MID HI | CLD (TENTHS) :LOW MID HI | CLD (TENTHS) :LOW MID HI |
| CLD HT (M) :LOW MID HI | CLD HT (M) :LOW MID HI | CLD HT (M) :LOW MID HI | CLD HT (M) :LOW MID HI | CLD HT (M) :LOW MID HI | CLD HT (M) :LOW MID HI |
| EXPONENTS :A= -.12 B= .19 P= .09 | EXPONENTS :A= -.13 B= .15 P= .08 | EXPONENTS :A= -.23 B= .02 P= .11 | EXPONENTS :A= -.13 B= .15 P= .08 | EXPONENTS :A= -.23 B= .02 P= .11 | EXPONENTS :A= -.23 B= .02 P= .11 |
| NET RADIATION :28.96 MW/CM2 | NET RADIATION :35.52 MW/CM2 | NET RADIATION :39.15 MW/CM2 | NET RADIATION :35.52 MW/CM2 | NET RADIATION :39.15 MW/CM2 | NET RADIATION :39.15 MW/CM2 |
| RICHARDSOEN NO. : (4M) -.33 (8M) -.98 (16M) -2.07 | RICHARDSOEN NO. : (4M) -.60 (8M) -1.77 (16M) -3.84 | RICHARDSOEN NO. : (4M) -.75 (8M) -2.18 (16M) -4.90 | RICHARDSOEN NO. : (4M) -.60 (8M) -1.77 (16M) -3.84 | RICHARDSOEN NO. : (4M) -.75 (8M) -2.18 (16M) -4.90 | RICHARDSOEN NO. : (4M) -.75 (8M) -2.18 (16M) -4.90 |
| (L/L)*10 : (39.192M) -2.27 (OBSERVED DATA) : (39.192M) -3.91 (OBSERVED DATA) : | (L/L)*10 : (39.192M) -2.27 (OBSERVED DATA) : (39.192M) -3.91 (OBSERVED DATA) : | (L/L)*10 : (39.192M) -2.27 (OBSERVED DATA) : (39.192M) -3.91 (OBSERVED DATA) : | (L/L)*10 : (39.192M) -2.27 (OBSERVED DATA) : (39.192M) -3.91 (OBSERVED DATA) : | (L/L)*10 : (39.192M) -2.27 (OBSERVED DATA) : (39.192M) -3.91 (OBSERVED DATA) : | (L/L)*10 : (39.192M) -2.27 (OBSERVED DATA) : (39.192M) -3.91 (OBSERVED DATA) : |
| USTAR : (4M) -.91 (8M) -1.30 (16M) -1.37 | USTAR : (4M) -1.61 (8M) -2.35 (16M) -2.53 | USTAR : (4M) -2.00 (8M) -2.88 (16M) -3.22 | USTAR : (4M) -1.61 (8M) -2.35 (16M) -2.53 | USTAR : (4M) -2.00 (8M) -2.88 (16M) -3.22 | USTAR : (4M) -2.00 (8M) -2.88 (16M) -3.22 |
| USTAR : (4M) .3635 (8M) .3647 (16M) .3622 | USTAR : (4M) .3030 (8M) .3091 (16M) .3094 | USTAR : (4M) .1811 (8M) .1891 (16M) .1947 | USTAR : (4M) .3030 (8M) .3091 (16M) .3094 | USTAR : (4M) .1811 (8M) .1891 (16M) .1947 | USTAR : (4M) .1811 (8M) .1891 (16M) .1947 |
| HEIGHT (M) :WD WS TEMP SIGA SIGE :WD WS TEMP SIGA SIGE : | HEIGHT (M) :WD WS TEMP SIGA SIGE :WD WS TEMP SIGA SIGE : | HEIGHT (M) :WD WS TEMP SIGA SIGE :WD WS TEMP SIGA SIGE : | HEIGHT (M) :WD WS TEMP SIGA SIGE :WD WS TEMP SIGA SIGE : | HEIGHT (M) :WD WS TEMP SIGA SIGE :WD WS TEMP SIGA SIGE : | HEIGHT (M) :WD WS TEMP SIGA SIGE :WD WS TEMP SIGA SIGE : |
| 1. : 177. 3.77 10.55 14.7 | 1. : 182. 3.00 12.81 18.0 | 1. : 186. 1.72 14.83 30.7 | 1. : 182. 3.00 12.81 18.0 | 1. : 186. 1.72 14.83 30.7 | 1. : 186. 1.72 14.83 30.7 |
| 2. : 166. 4.22 10.25 13.5 | 2. : 171. 3.30 12.32 17.1 | 2. : 174. 1.93 14.62 28.1 | 2. : 171. 3.30 12.32 17.1 | 2. : 174. 1.93 14.62 28.1 | 2. : 174. 1.93 14.62 28.1 |
| 4. : 163. 4.53 9.82 13.2 | 4. : 169. 3.50 11.97 16.2 | 4. : 168. 2.04 14.13 23.1 | 4. : 169. 3.50 11.97 16.2 | 4. : 168. 2.04 14.13 23.1 | 4. : 168. 2.04 14.13 23.1 |
| 8. : 163. 4.75 9.56 12.8 | 8. : 168. 3.69 11.68 14.7 | 8. : 160. 2.23 13.90 22.9 | 8. : 168. 3.69 11.68 14.7 | 8. : 160. 2.23 13.90 22.9 | 8. : 160. 2.23 13.90 22.9 |
| 16. : 166. 4.89 9.25 11.2 | 16. : 169. 3.82 11.32 13.2 | 16. : 160. 2.36 13.51 15.7 | 16. : 169. 3.82 11.32 13.2 | 16. : 160. 2.36 13.51 15.7 | 16. : 160. 2.36 13.51 15.7 |
| 32. : 163. 5.03 9.01 9.6 | 32. : 167. 3.98 11.06 11.9 | 32. : 155. 2.50 13.21 15.0 | 32. : 167. 3.98 11.06 11.9 | 32. : 155. 2.50 13.21 15.0 | 32. : 155. 2.50 13.21 15.0 |
| 48. : 163. 5.03 9.01 9.6 | 48. : 167. 3.98 11.06 11.9 | 48. : 155. 2.50 13.21 15.0 | 48. : 167. 3.98 11.06 11.9 | 48. : 155. 2.50 13.21 15.0 | 48. : 155. 2.50 13.21 15.0 |

LEAST SQUARES FITTED DATA

| | | | | | |
|--|--|--|--|--|--|
| HEIGHT (M) :WD WS TEMP SIGA SIGE :WD WS TEMP SIGA SIGE : | HEIGHT (M) :WD WS TEMP SIGA SIGE :WD WS TEMP SIGA SIGE : | HEIGHT (M) :WD WS TEMP SIGA SIGE :WD WS TEMP SIGA SIGE : | HEIGHT (M) :WD WS TEMP SIGA SIGE :WD WS TEMP SIGA SIGE : | HEIGHT (M) :WD WS TEMP SIGA SIGE :WD WS TEMP SIGA SIGE : | HEIGHT (M) :WD WS TEMP SIGA SIGE :WD WS TEMP SIGA SIGE : |
| 1.0 : 3.68 10.58 16.4 4.1 | 1.0 : 2.90 12.76 20.3 5.5 | 1.0 : 1.62 14.78 38.0 18.4 | 1.0 : 2.90 12.76 20.3 5.5 | 1.0 : 1.62 14.78 38.0 18.4 | 1.0 : 1.62 14.78 38.0 18.4 |
| 2.0 : 3.91 10.50 15.1 4.7 | 2.0 : 3.07 12.68 18.6 6.1 | 2.0 : 1.75 14.72 32.3 18.6 | 2.0 : 3.07 12.68 18.6 6.1 | 2.0 : 1.75 14.72 32.3 18.6 | 2.0 : 1.75 14.72 32.3 18.6 |
| 4.0 : 4.14 10.35 13.9 5.4 | 4.0 : 3.25 12.51 17.0 6.8 | 4.0 : 1.89 14.58 27.5 18.9 | 4.0 : 3.25 12.51 17.0 6.8 | 4.0 : 1.89 14.58 27.5 18.9 | 4.0 : 1.89 14.58 27.5 18.9 |
| 8.0 : 4.40 10.06 12.8 6.1 | 8.0 : 3.45 12.20 15.6 7.5 | 8.0 : 2.04 14.34 23.4 19.1 | 8.0 : 3.45 12.20 15.6 7.5 | 8.0 : 2.04 14.34 23.4 19.1 | 8.0 : 2.04 14.34 23.4 19.1 |
| 16.0 : 4.66 9.59 11.8 7.0 | 16.0 : 3.65 11.70 14.3 8.4 | 16.0 : 2.21 13.92 19.9 19.4 | 16.0 : 3.65 11.70 14.3 8.4 | 16.0 : 2.21 13.92 19.9 19.4 | 16.0 : 2.21 13.92 19.9 19.4 |
| 32.0 : 4.95 9.06 10.9 8.0 | 32.0 : 3.87 11.13 13.1 9.3 | 32.0 : 2.39 13.39 16.9 19.7 | 32.0 : 3.87 11.13 13.1 9.3 | 32.0 : 2.39 13.39 16.9 19.7 | 32.0 : 2.39 13.39 16.9 19.7 |
| 48.0 : 5.12 9.08 10.4 8.7 | 48.0 : 4.00 11.14 12.4 9.8 | 48.0 : 2.50 13.26 15.4 19.8 | 48.0 : 4.00 11.14 12.4 9.8 | 48.0 : 2.50 13.26 15.4 19.8 | 48.0 : 2.50 13.26 15.4 19.8 |
| DU/DZ OTH/DZ BU*100 RI : DU/DZ OTH/DZ BU*100 RI : | DU/DZ OTH/DZ BU*100 RI : DU/DZ OTH/DZ BU*100 RI : | DU/DZ OTH/DZ BU*100 RI : DU/DZ OTH/DZ BU*100 RI : | DU/DZ OTH/DZ BU*100 RI : DU/DZ OTH/DZ BU*100 RI : | DU/DZ OTH/DZ BU*100 RI : DU/DZ OTH/DZ BU*100 RI : | DU/DZ OTH/DZ BU*100 RI : DU/DZ OTH/DZ BU*100 RI : |
| 4.0 : .0817 -.0637 -.205 -.06 | 4.0 : .0629 -.0687 -.357 -.10 | 4.0 : .0491 -.0528 -.805 -.21 | 4.0 : .0629 -.0687 -.357 -.10 | 4.0 : .0491 -.0528 -.805 -.21 | 4.0 : .0491 -.0528 -.805 -.21 |
| 8.0 : .0433 -.0530 -.607 -.28 | 8.0 : .0333 -.0574 -.1063 -.55 | 8.0 : .0265 -.0450 -.2353 -.18 | 8.0 : .0333 -.0574 -.1063 -.55 | 8.0 : .0265 -.0450 -.2353 -.18 | 8.0 : .0265 -.0450 -.2353 -.18 |
| 16.0 : .0230 -.0316 -.1287 -.32 | 16.0 : .0177 -.0348 -.2300 -.91 | 16.0 : .0143 -.0295 -.5284 -.53 | 16.0 : .0177 -.0348 -.2300 -.91 | 16.0 : .0143 -.0295 -.5284 -.53 | 16.0 : .0143 -.0295 -.5284 -.53 |
| 39.2* : .0087 -.0050 -.1087 -.84 | 39.2* : .0100 -.0062 -.2184 -.716 | 39.2* : .0088 -.0088 -.7830 -.6817 | 39.2* : .0100 -.0062 -.2184 -.716 | 39.2* : .0088 -.0088 -.7830 -.6817 | 39.2* : .0088 -.0088 -.7830 -.6817 |

* OBSERVED DATA

OBSERVED DATA

| | | | | | | | | | |
|-------------------|---------------|-------------------|---------------|--------------|-----------------|-----------|------------|--------------|--------------|
| : DATE 22/03/77 | TIME 13:00:00 | : DATE 22/03/77 | TIME 15:00:00 | | | | | | |
| : WEATHER | : | : WEATHER | : | | | | | | |
| : TEMP DEG C | 16.7 | : TEMP DEG C | 17.8 | | | | | | |
| : DEW POINT DEG C | -8.4 | : DEW POINT DEG C | -8.3 | | | | | | |
| : VISIBILITY (MI) | 85 | : VISIBILITY (MI) | 85 | | | | | | |
| : CLD (TENTHS) | LOW MID HI | : CLD (TENTHS) | LOW MID HI | TOTL 0 | | | | | |
| : CLD HT (M) | LOW MID HI | : CLD HT (M) | LOW MID HI | HI | | | | | |
| : EXPONENTS | : A = -.06 | : EXPONENTS | : A = .21 | : B = .14 | : P = .06 | | | | |
| : NET RADIATION | 38.10 | : NET RADIATION | 23.59 | MM/CM2 | | | | | |
| : RICHARDSON NO. | (4M)-1.16 | : RICHARDSON NO. | (4M)-.85 | (8M)-2.56 | (16M)-5.27 | | | | |
| : (1/L)*10 | (39.192M) | : (1/L)*10 | (39.192M) | -.00 | (OBSERVED DATA) | | | | |
| : USTAR | (4M)-3.09 | : USTAR | (4M)-4.43 | (16M)-4.69 | (4M)-2.26 | (8M)-3.38 | (16M)-3.46 | | |
| | (4M).1626 | | (8M).1708 | (16M).1739 | (4M).0849 | (8M).0860 | (16M).0841 | | |
| : HEIGHT (M) | : WD | : WS | : TEMP (C) | : SIGA (DEG) | : SIGE (DEG) | : WS | : TEMP (C) | : SIGA (DEG) | : SIGE (DEG) |
| : 1. | | | 15.85 | | | 16.13 | | | |
| : 2. | 193. | 1.51 | 15.98 | 28.3 | | 18. | .84 | 15.93 | 41.7 |
| : 4. | 182. | 1.63 | 15.88 | 28.2 | | 8. | .88 | 15.84 | 41.3 |
| : 8. | 179. | 1.66 | 15.30 | 25.7 | 18.9 | 12. | .98 | 15.75 | 47.5 |
| : 16. | 180. | 1.79 | 15.16 | 23.0 | 24.9 | 246. | .82 | 15.88 | 76.5 |
| : 32. | 173. | 1.96 | 14.67 | 25.3 | 26.8 | 250. | .95 | 15.61 | 86.4 |
| : 48. | 176. | 2.16 | 14.58 | 23.3 | 24.4 | 72. | 1.09 | 15.45 | 59.8 |

LEAST SQUARES FITTED DATA

| HEIGHT (M) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : |
|--------------|------------|------------|--------------|--------------|------------|------------|--------------|--------------|
| 1.0 : | 1.38 : | 15.94 : | 29.6 : | 14.8 : | .81 : | 15.97 : | 34.6 : | 18.9 : |
| 2.0 : | 1.49 : | 15.87 : | 28.3 : | 16.5 : | .84 : | 15.96 : | 39.9 : | 20.7 : |
| 4.0 : | 1.60 : | 15.75 : | 27.2 : | 18.3 : | .87 : | 15.93 : | 46.0 : | 22.8 : |
| 8.0 : | 1.72 : | 15.51 : | 26.0 : | 20.3 : | .91 : | 15.88 : | 53.1 : | 25.0 : |
| 16.0 : | 1.85 : | 15.11 : | 24.9 : | 22.6 : | .94 : | 15.78 : | 61.2 : | 27.5 : |
| 32.0 : | 1.99 : | 14.64 : | 23.9 : | 25.1 : | .98 : | 15.61 : | 70.6 : | 30.2 : |
| 48.0 : | 2.07 : | 14.59 : | 23.3 : | 26.7 : | 1.00 : | 15.46 : | 76.8 : | 31.9 : |
| ----- | | | | | | | | |
| : | DU/DZ : | DTH/DZ : | BU*100 : | RI : | DU/DZ : | DTH/DZ : | BU*100 : | RI : |
| ----- | | | | | | | | |
| 4.0 : | .0386 : | -.0509 : | -1.083 : | -.36 : | .0113 : | -.0032 : | -.229 : | -.03 : |
| 8.0 : | .0207 : | -.0427 : | -3.142 : | -2.85 : | .0059 : | -.0026 : | -.693 : | -.25 : |
| 16.0 : | .0112 : | -.0261 : | -6.669 : | -15.15 : | .0031 : | -.0015 : | -1.427 : | -.89 : |
| 39.2* : | .0125 : | .0044 : | 5.445 : | .00 : | .0088 : | -.0000 : | -.000 : | -.00 : |

* OBSERVED DATA

OBSERVED DATA

| DATE 23/03/77 TIME 10:00:00 : DATE 23/03/77 TIME 11:00:00 : DATE 23/03/77 TIME 12:00:00 : | | | | | | | | | | | | |
|---|-----------------|------------------|-----------------|------------------|-----------------|------------------|-----------------|------------------|-----------------|----------|------------|------------|
| WEATHER : WEATHER : WEATHER : | | | | | | | | | | | | |
| TEMP DEG C | | 15.6 | TEMP DEG C | | 16.7 | TEMP DEG C | | 18.3 | | | | |
| DEW POINT DEG C | | -8.9 | DEW POINT DEG C | | -9.5 | DEW POINT DEG C | | -8.9 | | | | |
| VISIBILITY (MI) | | 85 | VISIBILITY (MI) | | 85 | VISIBILITY (MI) | | 85 | | | | |
| CLD (TENTHS) | LOW | MID | HI | TOTL | LOW | MID | HI | TOTL | 1: | | | |
| CLD HT (M) | LOW | MID | HI | HI | LOW | MID | HI | HI | 2: | | | |
| EXPONENTS | A = -.15 | B = .12 | P = .12 | P = .09 | A = -.15 | B = -.01 | P = .09 | P = .10 | 3: | | | |
| NET RADIATION : | 29.73 MW/CM2 | | | 34.47 MW/CM2 | | | 38.10 MW/CM2 | | | | | |
| RICHARDSON NO.: | (4M) -.15 | (8M) -.43 | (16M) -.90 | (4M) -.50 | (8M) -1.48 | (16M) -3.08 | (4M) -.08 | (8M) -.23 | (16M) -.47 | | | |
| (1/L)*10 | (39.192M) -1.61 | (OBSERVED DATA): | (39.192M) -1.61 | (OBSERVED DATA): | (39.192M) -1.61 | (OBSERVED DATA): | (39.192M) -1.61 | (OBSERVED DATA): | (39.192M) -1.61 | | | |
| USTAR | (4M) -.43 | (8M) -.59 | (16M) -.60 | (4M) -1.36 | (8M) -1.96 | (16M) -2.03 | (4M) -.23 | (8M) -.31 | (16M) -.32 | | | |
| | (4M) .3865 | (8M) .3867 | (16M) .3879 | (4M) .2887 | (8M) .2932 | (16M) .2921 | (4M) .6705 | (8M) .6540 | (16M) .6433 | | | |
| WEATHER : WEATHER : WEATHER : | | | | | | | | | | | | |
| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
| 1. | 171. | 4.17 | 15.27 | 11.7 | 202. | 2.93 | 16.94 | 15.4 | 202. | 7.55 | 19.44 | 11.6 |
| 2. | 161. | 4.73 | 14.94 | 10.6 | 192. | 3.19 | 16.40 | 15.2 | 192. | 8.56 | 18.82 | 10.8 |
| 4. | 158. | 5.21 | 14.52 | 9.8 | 188. | 3.35 | 16.11 | 14.6 | 189. | 9.23 | 18.37 | 9.4 |
| 8. | 159. | 5.64 | 14.15 | 8.2 | 187. | 3.62 | 15.91 | 13.8 | 188. | 9.77 | 18.06 | 8.5 |
| 16. | 162. | 5.88 | 13.83 | 7.5 | 192. | 3.84 | 15.60 | 11.3 | 192. | 10.25 | 17.64 | 8.8 |
| 32. | 158. | 6.09 | 13.54 | 7.7 | 185. | 3.82 | 15.37 | 8.9 | 189. | 10.58 | 17.40 | 9.3 |
| 48. | | | | | | | | | | | | |

LEAST SQUARES FITTED DATA

| HEIGHT (M) : | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|-----------------|----------|----------|------------|------------|----------|----------|------------|------------|----------|----------|------------|------------|
| 1.0 : | 3.98 | 15.29 | 12.9 | 5.1 : | 2.80 | 16.95 | 18.8 | 10.2 : | 7.29 | 19.39 | 11.8 | 3.9 : |
| 2.0 : | 4.31 | 15.20 | 11.7 | 5.6 : | 2.97 | 16.77 | 16.9 | 10.1 : | 7.82 | 19.28 | 11.1 | 4.2 : |
| 4.0 : | 4.67 | 15.04 | 10.5 | 6.0 : | 3.16 | 16.62 | 15.1 | 10.1 : | 8.38 | 19.07 | 10.5 | 4.4 : |
| 8.0 : | 5.06 | 14.73 | 9.5 | 6.5 : | 3.35 | 16.35 | 13.6 | 10.0 : | 8.99 | 18.69 | 9.9 | 4.8 : |
| 16.0 : | 5.49 | 14.22 | 8.6 | 7.1 : | 3.56 | 15.91 | 12.2 | 10.0 : | 9.64 | 18.07 | 9.3 | 5.1 : |
| 32.0 : | 5.95 | 13.63 | 7.8 | 7.7 : | 3.78 | 15.42 | 10.9 | 9.9 : | 10.34 | 17.40 | 8.8 | 5.4 : |
| 48.0 : | 6.23 | 13.62 | 7.3 | 8.1 : | 3.92 | 15.44 | 10.3 | 9.9 : | 10.77 | 17.50 | 8.5 | 5.6 : |
| ----- | | | | | | | | | | | | |
| : | DU/DZ | DTH/DZ | BU*100 | RI : | DU/DZ | DTH/DZ | BU*100 | RI : | DU/DZ | DTH/DZ | BU*100 | RI : |
| ----- | | | | | | | | | | | | |
| 4.0 : | .1253 | -.0695 | -.173 | -.03 : | .0634 | -.0596 | -.323 | -.06 : | .1953 | -.0884 | -.067 | -.04 : |
| 8.0 : | .0679 | -.0582 | -.495 | -.22 : | .0337 | -.0494 | -.952 | -.48 : | .1047 | -.0735 | -.195 | -.11 : |
| 16.0 : | .0368 | -.0358 | -1.037 | -1.25 : | .0179 | -.0291 | -1.988 | -2.48 : | .0561 | -.0437 | -.405 | -.23 : |
| 39.2* : | .0131 | -.0081 | -1.194 | -2.55 : | -.0013 | -.0044 | -1.554 | -1.12 : | .0206 | -.0050 | -.239 | -.20 : |
| ----- | | | | | | | | | | | | |
| * OBSERVED DATA | | | | | | | | | | | | |

* OBSERVED DATA

OBSERVED DATA

| | DATE 23/03/77 | TIME 13:00:00 | DATE 23/03/77 | TIME 14:00:00 | DATE 23/03/77 | TIME 15:00:00 |
|----------------|-----------------|------------------|-----------------|------------------|-----------------|------------------|
| | WEATHER | | WEATHER | | WEATHER | |
| | TEMP DEG C | 19.5 | TEMP DEG C | 20.5 | TEMP DEG C | 21.1 |
| | DEW POINT DEG C | -8.3 | DEW POINT DEG C | -7.8 | DEW POINT DEG C | -8.3 |
| | VISIBILITY (MI) | 85 | VISIBILITY (MI) | 40 | VISIBILITY (MI) | 30 |
| CLD (TENTHS) | LOW | MID | 1 HI | TOTAL | 1:LOW | HI |
| CLD HT (M) | LOW | MID | 4570 HI | HI | LOW | HI |
| EXPONENTS | A = -.13 | B = .08 | P = .12 | P = .12 | A = .03 | B = .03 |
| NET RADIATION | 38.45 MW/CM2 | | 32.24 MW/CM2 | | 23.93 MW/CM2 | |
| RICHARDSON NO. | (4M) -.05 | (8M) -.14 | (16M) -.29 | (4M) -.04 | (8M) -.12 | (16M) -.25 |
| (L/L)*10 | (39.192M) -.37 | (OBSERVED DATA): | (39.192M) -.22 | (OBSERVED DATA): | (39.192M) -.17 | (OBSERVED DATA): |
| USTAR | (4M) -.15 | (8M) -.20 | (16M) -.20 | (4M) -.13 | (8M) -.17 | (16M) -.17 |
| | (4M).7284 | (8M).7107 | (16M).7028 | (4M).7123 | (8M).6941 | (16M).6851 |
| | WD | WS | TEMP | SIGA | SIGE | WD |
| HEIGHT (M) | :(DEG) | (M/S) | (C) | (DEG) | (DEG) | WS |
| | | | | | | TEMP |
| | | | | | | (C) |
| | | | | | | (DEG) |
| | | | | | | (DEG) |
| 1. | 196. | 8.31 | 20.12 | 10.5 | 20.85 | 21.16 |
| 2. | 186. | 9.42 | 19.41 | 10.5 | 20.64 | 21.03 |
| 4. | 183. | 10.20 | 18.98 | 10.0 | 20.00 | 20.49 |
| 8. | 182. | 11.06 | 18.59 | 8.7 | 19.73 | 20.20 |
| 16. | 187. | 11.78 | 18.07 | 7.8 | 19.39 | 19.90 |
| 32. | 184. | 12.10 | 17.84 | 7.3 | 18.97 | 19.50 |
| 48. | | | | | 18.72 | 19.28 |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|---|----------|----------|------------|------------|----------|----------|------------|------------|
| 1.0 | 7.89 | 19.95 | 12.2 | 3.8 | 7.73 | 20.59 | 9.0 | 5.1 |
| 2.0 | 8.55 | 19.84 | 11.2 | 4.0 | 8.38 | 20.49 | 9.2 | 5.1 |
| 4.0 | 9.26 | 19.63 | 10.2 | 4.2 | 9.10 | 20.30 | 9.4 | 5.0 |
| 8.0 | 10.04 | 19.24 | 9.4 | 4.5 | 9.87 | 19.96 | 9.6 | 5.0 |
| 16.0 | 10.88 | 18.60 | 8.6 | 4.7 | 10.71 | 19.40 | 9.7 | 4.9 |
| 32.0 | 11.79 | 17.88 | 7.9 | 5.0 | 11.63 | 18.77 | 9.9 | 4.9 |
| 48.0 | 12.36 | 17.92 | 7.5 | 5.1 | 12.20 | 18.80 | 10.0 | 4.9 |
| DU/DZ DTH/DZ BU*100 RI DU/DZ DTH/DZ BU*100 RI | | | | | | | | |
| 4.0 | .2485 | -.0907 | -.057 | -.02 | .2482 | -.0783 | -.051 | -.02 |
| 8.0 | .1347 | -.0760 | -.162 | -.07 | .1347 | -.0654 | -.144 | -.06 |
| 16.0 | .0730 | -.0466 | -.338 | -.29 | .0731 | -.0396 | -.296 | -.25 |
| 39.2* | .0200 | -.0044 | -.159 | -.18 | .0294 | -.0056 | -.210 | -.22 |
| * OBSERVED DATA | | | | | | | | |
| 4.0 | .2762 | -.0691 | -.035 | -.03 | .2762 | -.0691 | -.035 | -.03 |
| 8.0 | .1497 | -.0577 | -.100 | -.04 | .1497 | -.0577 | -.100 | -.04 |
| 16.0 | .0811 | -.0348 | -.206 | -.18 | .0811 | -.0348 | -.206 | -.18 |
| 39.2* | .0025 | -.0038 | -.110 | -.03 | .0025 | -.0038 | -.110 | -.03 |

OBSERVED DATA

DATE 23/03/77 TIME 16:00:00 : DATE 23/03/77 TIME 17:00:00 : DATE 23/03/77 TIME 18:00:00 :
 WEATHER BD : WEATHER BD : WEATHER BD :
 TEMP DEG C 20.0 : TEMP DEG C 19.5 : TEMP DEG C 18.3 :
 DEW POINT DEG C -8.9 : DEW POINT DEG C -8.9 : DEW POINT DEG C -10.0 :
 VISIBILITY (MI) 5 : VISIBILITY (MI) 7 : VISIBILITY (MI) 3 :
 CLD (TENTHS) : LOW MID HI TOTAL 0:LOW MID HI 3:LOW MID HI 4:TOTL 5:
 CLD HT (M) : LOW MID HI : LOW MID HI : LOW MID HI :
 EXPONENTS : A = -.11 B = -.05 P = .13 : A = -.08 B = -.07 P = .12 : A = -.16 B = -.14 P = .15 :
 NET RADIATION : 12.70 MW/CM2 : -3.28 MW/CM2 : -7.61 MW/CM2 :
 RICHARDSN NO.: (4M) -.01 (8M) -.03(16M) -.06 : (4M) .00 (8M) .00(16M) .00 : (4M) .01 (8M) .03(16M) .06 :
 (1/L)*10 : (39.192M) -.65 (OBSERVED DATA) : (39.192M) -.20 (OBSERVED DATA) : (39.192M) -.05 (OBSERVED DATA) :
 USTAR : (4M) -.03 (8M) -.04 (16M) -.05 : (4M) .00 (8M) .01 (16M) .00 : (4M) .03 (8M) .05 (16M) .07 :
 : (4M).8615 (8M).8296 (16M).8162 : (4M).8344 (8M).7890 (16M).7624 : (4M).7153 (8M).6553 (16M).6052 :

HEIGHT (M) : (DEG) (M/S) (C) TEMP SIGA SIGE : (DEG) (DEG) (M/S) (C) TEMP SIGA SIGE :
 1. : 198. 10.01 20.29 7.5 : 202. 9.91 19.47 5.9 : 201. 8.65 17.97 6.9 :
 2. : 188. 11.50 19.91 7.3 : 193. 11.24 19.22 6.0 : 192. 9.98 17.79 6.6 :
 4. : 186. 12.54 19.86 6.8 : 4.6: 190. 12.23 19.35 5.6 : 4.1: 188. 10.89 18.09 5.5 :
 8. : 189. 13.76 19.69 6.0 : 4.3: 194. 13.24 19.34 5.2 : 3.9: 191. 11.89 18.19 4.9 :
 16. : 189. 14.91 19.33 5.6 : 4.3: 194. 14.33 19.11 4.8 : 3.7: 191. 13.31 18.13 4.4 :
 32. : 186. 15.25 19.03 5.3 : 4.1: 191. 14.79 18.87 4.6 : 3.6: 189. 13.90 17.94 4.3 :
 48. : 20.40 : 19.40 : 17.75 :

LEAST SQUARES FITTED DATA

HEIGHT (M) : (M/S) (C) TEMP SIGA SIGE : (M/S) (C) TEMP SIGA SIGE :
 1.0 : 9.41 20.25 8.3 5.0 : 9.32 19.38 6.5 4.7 : 7.98 17.82 7.8 5.9 :
 2.0 : 10.30 20.21 7.7 4.9 : 10.15 19.38 6.1 4.5 : 8.83 17.85 7.0 5.4 :
 4.0 : 11.29 20.12 7.1 4.7 : 11.06 19.37 5.8 4.3 : 9.77 17.91 6.3 4.9 :
 8.0 : 12.36 19.95 6.6 4.5 : 12.05 19.35 5.5 4.1 : 10.81 18.01 5.6 4.4 :
 16.0 : 13.54 19.67 6.1 4.4 : 13.13 19.29 5.1 3.9 : 11.96 18.15 5.0 4.0 :
 32.0 : 14.83 19.25 5.6 4.2 : 14.31 19.12 4.9 3.7 : 13.23 18.19 4.5 3.7 :
 48.0 : 15.64 19.06 5.4 4.2 : 15.04 18.87 4.7 3.6 : 14.04 17.92 4.2 3.5 :
 : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI :
 4.0 : .3430 -.0321 -.013 -.01 : .3166 -.0055 .002 .00 : .3299 .0361 .020 .00 :
 8.0 : .1879 -.0278 -.039 -.03 : .1725 .0039 .006 .00 : .1825 .0299 .055 .00 :
 16.0 : .1029 -.0192 -.089 -.06 : .0940 .0006 .003 .00 : .1010 .0176 .106 .00 :
 39.2* : .0213 -.0087 -.199 -.17 : .0288 -.0050 -.122 -.10 : .0369 -.0019 -.053 -.05 :

* OBSERVED DATA

OBSERVED DATA

| | DATE 23/03/77 | TIME 19:00:00 | DATE 23/03/77 | TIME 20:00:00 | DATE 23/03/77 | TIME 21:00:00 |
|-----------------|--|-----------------|--|-----------------|--|-----------------|
| WEATHER D | WEATHER D | WEATHER D | WEATHER D | WEATHER D | WEATHER D | WEATHER D |
| TEMP DEG C | 16.7 | TEMP DEG C | 15.0 | TEMP DEG C | 13.9 | TEMP DEG C |
| DEW POINT DEG C | -11.1 | DEW POINT DEG C | -11.1 | DEW POINT DEG C | -10.1 | DEW POINT DEG C |
| VISIBILITY (MI) | 4 | VISIBILITY (MI) | 4 | VISIBILITY (MI) | 7 | VISIBILITY (MI) |
| CLD (TENTHS) | LOW | CLD (TENTHS) | LOW | CLD (TENTHS) | LOW | CLD (TENTHS) |
| CLD HT (M) | LOW | CLD HT (M) | LOW | CLD HT (M) | LOW | CLD HT (M) |
| EXPONENTS | A = -.19 B = -.17 P = .19 | EXPONENTS | A = -.13 B = -.04 P = .20 | EXPONENTS | A = -.20 B = -.14 P = .21 | EXPONENTS |
| NET RADIATION | -11.58 MW/CM2 | NET RADIATION | -10.88 MW/CM2 | NET RADIATION | -9.07 MW/CM2 | NET RADIATION |
| RICHARDSON NO. | (4M) .02 (8M) .06 (16M) .12 (4M) .02 (8M) .06 (16M) .13 (4M) .03 (8M) .06 (16M) .15 (39.192M) .06 (OBSERVED DATA): (39.192M) .05 (OBSERVED DATA): (39.192M) .06 (OBSERVED DATA): | RICHARDSON NO. | (4M) .02 (8M) .06 (16M) .12 (4M) .02 (8M) .06 (16M) .13 (4M) .03 (8M) .06 (16M) .15 (39.192M) .05 (OBSERVED DATA): (39.192M) .05 (OBSERVED DATA): (39.192M) .06 (OBSERVED DATA): | RICHARDSON NO. | (4M) .03 (8M) .03 (8M) .03 (8M) .06 (OBSERVED DATA): (39.192M) .06 (OBSERVED DATA): (39.192M) .06 (OBSERVED DATA): | RICHARDSON NO. |
| (1/L)*LO | (4M) .08 (8M) .15 (16M) .22 (4M) .09 (8M) .16 (16M) .23 (4M) .11 (8M) .20 (16M) .30 | (1/L)*LO | (4M) .08 (8M) .15 (16M) .22 (4M) .09 (8M) .16 (16M) .23 (4M) .11 (8M) .20 (16M) .30 | (1/L)*LO | (4M) .08 (8M) .15 (16M) .22 (4M) .09 (8M) .16 (16M) .23 (4M) .11 (8M) .20 (16M) .30 | (1/L)*LO |
| USTAR | (4M) .5097 (8M) .4605 (16M) .4177 (4M) .4742 (8M) .4318 (16M) .3875 (4M) .3975 (8M) .3584 (16M) .3269 | USTAR | (4M) .5097 (8M) .4605 (16M) .4177 (4M) .4742 (8M) .4318 (16M) .3875 (4M) .3975 (8M) .3584 (16M) .3269 | USTAR | (4M) .5097 (8M) .4605 (16M) .4177 (4M) .4742 (8M) .4318 (16M) .3875 (4M) .3975 (8M) .3584 (16M) .3269 | USTAR |
| HEIGHT (M) | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | HEIGHT (M) | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | HEIGHT (M) | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | HEIGHT (M) |
| 1. | 15.46 | 1. | 14.40 | 1. | 13.84 | 1. |
| 2. | 6.31 15.78 7.7 | 2. | 5.87 14.69 6.9 | 2. | 5.03 14.13 6.8 | 2. |
| 4. | 7.27 15.70 8.0 | 4. | 6.77 14.64 6.7 | 4. | 5.83 14.09 6.4 | 4. |
| 8. | 8.08 16.11 6.4 | 8. | 7.55 15.06 5.8 | 8. | 6.59 14.52 5.2 | 8. |
| 16. | 9.22 16.40 5.8 | 16. | 8.59 15.37 5.2 | 16. | 7.56 14.80 4.6 | 16. |
| 32. | 10.66 16.57 5.0 | 32. | 10.11 15.54 4.8 | 32. | 8.86 14.95 4.2 | 32. |
| 48. | 11.58 16.51 4.4 | 48. | 11.24 15.49 4.8 | 48. | 9.97 14.92 3.6 | 48. |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------|----------|------------|------------|----------|----------|------------|------------|----------|----------|------------|------------|
| 1.0 | 5.53 | 15.59 | 9.4 | 6.7 | 5.07 | 14.52 | 7.6 | 4.6 | 4.31 | 13.97 | 8.0 | 5.7 |
| 2.0 | 6.30 | 15.66 | 8.3 | 5.9 | 5.82 | 14.59 | 7.0 | 4.5 | 4.99 | 14.04 | 7.0 | 5.1 |
| 4.0 | 7.18 | 15.78 | 7.3 | 5.3 | 6.68 | 14.72 | 6.4 | 4.3 | 5.77 | 14.16 | 6.1 | 4.7 |
| 8.0 | 8.19 | 16.00 | 6.4 | 4.7 | 7.68 | 14.95 | 5.9 | 4.2 | 6.68 | 14.39 | 5.3 | 4.2 |
| 16.0 | 9.33 | 16.35 | 5.6 | 4.2 | 8.82 | 15.31 | 5.4 | 4.1 | 7.72 | 14.74 | 4.6 | 3.8 |
| 32.0 | 10.63 | 16.67 | 5.0 | 3.7 | 10.13 | 15.65 | 4.9 | 3.9 | 8.93 | 15.07 | 4.1 | 3.5 |
| 48.0 | 11.48 | 16.47 | 4.6 | 3.4 | 10.98 | 15.45 | 4.7 | 3.9 | 9.73 | 14.88 | 3.7 | 3.3 |
| | DU/DZ | OTH/DZ | BU*100 | RI | DU/DZ | OTH/DZ | BU*100 | RI | DU/DZ | OTH/DZ | BU*100 | RI |
| 4.0 | .3142 | .0674 | .071 | .00 | .3096 | .0699 | .085 | .00 | .2811 | .0685 | .112 | .00 |
| 8.0 | .1790 | .0575 | .186 | .00 | .1778 | .0596 | .220 | .00 | .1626 | .0584 | .286 | .00 |
| 16.0 | .1020 | .0377 | .375 | .00 | .1021 | .0390 | .437 | .00 | .0940 | .0383 | .560 | .00 |
| 39.2* | .0575 | .0063 | .265 | .00 | .0706 | .0069 | .318 | .00 | .0694 | .0081 | .485 | .00 |

* OBSERVED DATA

OBSERVED DATA

| DATE 23/03/77 TIME 22:00:00 : DATE 23/03/77 TIME 23:00:00 : DATE 24/03/77 TIME 00:00:00 : | | | | | | | | | |
|---|---|--|---|--|---|--|---|--|---|
| WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | |
| TEMP DEG C | 14.4 | TEMP DEG C | 11.0 | TEMP DEG C | 8.9 | TEMP DEG C | 8.9 | TEMP DEG C | 8.9 |
| DEW POINT DEG C | -7.8 | DEW POINT DEG C | -1.2 | DEW POINT DEG C | -2.2 | DEW POINT DEG C | -2.2 | DEW POINT DEG C | -2.2 |
| VISIBILITY (MI) | 7 | VISIBILITY (MI) | 3 | VISIBILITY (MI) | 3 | VISIBILITY (MI) | 3 | VISIBILITY (MI) | 3 |
| CLD (TENTHS) | LOW | CLD (TENTHS) | LOW | CLD (TENTHS) | LOW | CLD (TENTHS) | LOW | CLD (TENTHS) | LOW |
| CLD HT (M) | 3050 | CLD HT (M) | 3050 | CLD HT (M) | 3050 | CLD HT (M) | 3050 | CLD HT (M) | 3050 |
| EXPONENTS | A = -.20 | EXPONENTS | A = -.16 | EXPONENTS | A = -.03 | EXPONENTS | A = -.29 | EXPONENTS | A = -.28 |
| NET RADIATION | -4.33 MW/CM2 | NET RADIATION | -3.98 MW/CM2 | NET RADIATION | -3.98 MW/CM2 | NET RADIATION | -3.98 MW/CM2 | NET RADIATION | -3.98 MW/CM2 |
| RICHARDSON NO. | (4M) .01 (8M) .03 (16M) .06 : (4M) .01 (8M) .03 (16M) .04 : (4M) .01 (8M) .02 (16M) .04 : | RICHARDSON NO. | (39.192M) .00 (OBSERVED DATA) : (39.192M) -.08 (OBSERVED DATA) : (39.192M) -.10 (OBSERVED DATA) : | RICHARDSON NO. | (4M) .03 (8M) .05 (16M) .07 : (4M) .03 (8M) .05 (16M) .05 : (4M) .02 (8M) .04 (16M) .04 : | RICHARDSON NO. | (4M) .4048 (8M) .3843 (16M) .3684 : (4M) .3807 (8M) .3594 (16M) .3581 : (4M) .5667 (8M) .5352 (16M) .5057 : | RICHARDSON NO. | (4M) .4048 (8M) .3843 (16M) .3684 : (4M) .3807 (8M) .3594 (16M) .3581 : (4M) .5667 (8M) .5352 (16M) .5057 : |
| HEIGHT (M) | WD WS TEMP SIGA SIGE : (DEG) (DEG) : (DEG) (DEG) : (DEG) (DEG) : | WD WS TEMP SIGA SIGE : (DEG) (DEG) : (DEG) (DEG) : (DEG) (DEG) : | WD WS TEMP SIGA SIGE : (DEG) (DEG) : (DEG) (DEG) : (DEG) (DEG) : | WD WS TEMP SIGA SIGE : (DEG) (DEG) : (DEG) (DEG) : (DEG) (DEG) : | WD WS TEMP SIGA SIGE : (DEG) (DEG) : (DEG) (DEG) : (DEG) (DEG) : | WD WS TEMP SIGA SIGE : (DEG) (DEG) : (DEG) (DEG) : (DEG) (DEG) : | WD WS TEMP SIGA SIGE : (DEG) (DEG) : (DEG) (DEG) : (DEG) (DEG) : | WD WS TEMP SIGA SIGE : (DEG) (DEG) : (DEG) (DEG) : (DEG) (DEG) : | WD WS TEMP SIGA SIGE : (DEG) (DEG) : (DEG) (DEG) : (DEG) (DEG) : |
| 1. | 321. | 4.64 | 10.59 | 8.8 | 9.46 | 4.03 | 9.55 | 8.8 | 9.46 |
| 2. | 311. | 5.85 | 10.54 | 7.7 | 297. | 5.94 | 9.47 | 7.8 | 343. |
| 4. | 311. | 6.38 | 10.72 | 6.7 | 4.4 | 295. | 9.58 | 7.4 | 4.2 |
| 8. | 314. | 7.14 | 10.76 | 6.1 | 3.8 | 298. | 9.57 | 6.3 | 3.1 |
| 16. | 312. | 8.15 | 10.70 | 5.0 | 3.4 | 296. | 9.45 | 5.4 | 3.8 |
| 32. | 310. | 9.23 | 10.55 | 4.5 | 3.6 | 294. | 9.24 | 5.5 | 3.8 |
| 48. | | | | | | | | | |

LEAST SQUARES FITTED DATA

| DATE 23/03/77 TIME 22:00:00 : DATE 23/03/77 TIME 23:00:00 : DATE 24/03/77 TIME 00:00:00 : | | | | | | | | | |
|---|---|--|---|--|---|--|---|--|---|
| WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | |
| TEMP DEG C | 14.4 | TEMP DEG C | 11.0 | TEMP DEG C | 8.9 | TEMP DEG C | 8.9 | TEMP DEG C | 8.9 |
| DEW POINT DEG C | -7.8 | DEW POINT DEG C | -1.2 | DEW POINT DEG C | -2.2 | DEW POINT DEG C | -2.2 | DEW POINT DEG C | -2.2 |
| VISIBILITY (MI) | 7 | VISIBILITY (MI) | 3 | VISIBILITY (MI) | 3 | VISIBILITY (MI) | 3 | VISIBILITY (MI) | 3 |
| CLD (TENTHS) | LOW | CLD (TENTHS) | LOW | CLD (TENTHS) | LOW | CLD (TENTHS) | LOW | CLD (TENTHS) | LOW |
| CLD HT (M) | 3050 | CLD HT (M) | 3050 | CLD HT (M) | 3050 | CLD HT (M) | 3050 | CLD HT (M) | 3050 |
| EXPONENTS | A = -.20 | EXPONENTS | A = -.16 | EXPONENTS | A = -.03 | EXPONENTS | A = -.29 | EXPONENTS | A = -.28 |
| NET RADIATION | -4.33 MW/CM2 | NET RADIATION | -3.98 MW/CM2 | NET RADIATION | -3.98 MW/CM2 | NET RADIATION | -3.98 MW/CM2 | NET RADIATION | -3.98 MW/CM2 |
| RICHARDSON NO. | (4M) .01 (8M) .03 (16M) .06 : (4M) .01 (8M) .03 (16M) .04 : (4M) .01 (8M) .02 (16M) .04 : | RICHARDSON NO. | (39.192M) .00 (OBSERVED DATA) : (39.192M) -.08 (OBSERVED DATA) : (39.192M) -.10 (OBSERVED DATA) : | RICHARDSON NO. | (4M) .03 (8M) .05 (16M) .07 : (4M) .03 (8M) .05 (16M) .05 : (4M) .02 (8M) .04 (16M) .04 : | RICHARDSON NO. | (4M) .4048 (8M) .3843 (16M) .3684 : (4M) .3807 (8M) .3594 (16M) .3581 : (4M) .5667 (8M) .5352 (16M) .5057 : | RICHARDSON NO. | (4M) .4048 (8M) .3843 (16M) .3684 : (4M) .3807 (8M) .3594 (16M) .3581 : (4M) .5667 (8M) .5352 (16M) .5057 : |
| HEIGHT (M) | WD WS TEMP SIGA SIGE : (DEG) (DEG) : (DEG) (DEG) : (DEG) (DEG) : | WD WS TEMP SIGA SIGE : (DEG) (DEG) : (DEG) (DEG) : (DEG) (DEG) : | WD WS TEMP SIGA SIGE : (DEG) (DEG) : (DEG) (DEG) : (DEG) (DEG) : | WD WS TEMP SIGA SIGE : (DEG) (DEG) : (DEG) (DEG) : (DEG) (DEG) : | WD WS TEMP SIGA SIGE : (DEG) (DEG) : (DEG) (DEG) : (DEG) (DEG) : | WD WS TEMP SIGA SIGE : (DEG) (DEG) : (DEG) (DEG) : (DEG) (DEG) : | WD WS TEMP SIGA SIGE : (DEG) (DEG) : (DEG) (DEG) : (DEG) (DEG) : | WD WS TEMP SIGA SIGE : (DEG) (DEG) : (DEG) (DEG) : (DEG) (DEG) : | WD WS TEMP SIGA SIGE : (DEG) (DEG) : (DEG) (DEG) : (DEG) (DEG) : |
| 1.0 | 4.20 | 10.60 | 10.3 | 5.6 | 3.99 | 9.49 | 9.9 | 4.0 | 6.27 |
| 2.0 | 4.82 | 10.62 | 8.9 | 5.1 | 4.56 | 9.50 | 8.9 | 3.9 | 6.97 |
| 4.0 | 5.53 | 10.64 | 7.7 | 4.7 | 5.20 | 9.52 | 7.9 | 3.9 | 7.74 |
| 8.0 | 6.34 | 10.68 | 6.7 | 4.3 | 5.93 | 9.54 | 7.1 | 3.8 | 8.60 |
| 16.0 | 7.28 | 10.74 | 5.8 | 3.9 | 6.77 | 9.56 | 6.3 | 3.7 | 9.56 |
| 32.0 | 8.35 | 10.72 | 5.1 | 3.6 | 7.73 | 9.47 | 5.7 | 3.6 | 10.62 |
| 48.0 | 9.05 | 10.54 | 4.7 | 3.4 | 8.35 | 9.23 | 5.3 | 3.6 | 11.29 |
| DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : | | | | | | | | | |
| 4.0 | .2543 | .0211 | .038 | .00 | .2294 | .0165 | .034 | .00 | .2723 |
| 8.0 | .1459 | .0179 | .098 | .00 | .1309 | .0134 | .084 | .00 | .1513 |
| 16.0 | .0837 | .0116 | .193 | .00 | .0747 | .0072 | .139 | .00 | .0840 |
| 39.2* | .0675 | .0006 | .044 | .00 | .0362 | .0031 | -.276 | -.16 | .0213 |
| * OBSERVED DATA | | | | | | | | | |

OBSERVED DATA

| | DATE 24/03/77 | TIME 01:00:00 | DATE 24/03/77 | TIME 02:00:00 | DATE 24/03/77 | TIME 03:00:00 |
|-----------------|---|------------------|---|------------------|---|------------------|
| WEATHER | BD | | WEATHER | | WEATHER | RM- |
| TEMP DEG C | 8.2 | | TEMP DEG C | 7.2 | TEMP DEG C | 5.0 |
| DEW POINT DEG C | -1.3 | | DEW POINT DEG C | -0.8 | DEW POINT DEG C | 0.2 |
| VISIBILITY (MI) | 6 | | VISIBILITY (MI) | 7 | VISIBILITY (MI) | 10 |
| LOW 10 MID HI | TOTL | 10:LOW 10 MID HI | TOTL | 10:LOW 10 MID HI | TOTL | 10:LOW 10 MID HI |
| CLD (TENTHS) | LOW 10 MID HI | TOTL | 10:LOW 10 MID HI | TOTL | 10:LOW 10 MID HI | TOTL |
| CLD HT (M) | LOW 1930 MID HI | | LOW 1830 MID HI | | LOW 1830 MID HI | |
| EXPONENTS | A = -.23 B = -.13 P = .16 | | A = -.21 B = -.27 P = .14 | | A = -.29 B = -.19 P = .15 | |
| NET RADIATION | -10.68 MW/CM2 | | -16.33 MW/CM2 | | -9.07 MW/CM2 | |
| RICHARDSON NO. | (4M) .01 (8M) .02 (16M) .03 | | (4M) .03 (8M) .05 (16M) .07 | | (4M) .16 (8M) .25 (16M) .38 | |
| (1/L)*10 | (39.192M) -.02 (OBSERVED DATA) | | (39.192M) ***** (OBSERVED DATA) | | (39.192M) ***** (OBSERVED DATA) | |
| USTAR | (4M) .02 (8M) .03 (16M) .03 | | (4M) .11 (8M) .12 (16M) .09 | | (4M) 1.33 (8M) 1.48 (16M) 1.59 | |
| | (4M) .5213 (8M) .4948 (16M) .4801 | | (4M) .7061 (8M) .6518 (16M) .6181 | | (4M) .4067 (8M) .3487 (16M) .2990 | |
| HEIGHT (M) | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | |
| 1. | 357. 6.36 7.64 7.3 | | 10. 9.07 4.39 7.0 | | 22. 7.20 3.51 7.0 | |
| 2. | 348. 7.19 7.56 6.6 | | 1. 10.31 4.20 6.0 | | 14. 8.25 3.36 6.4 | |
| 4. | 341. 7.84 7.65 5.9 | | 4.2: 353. 11.52 5.5 | | 5. 9.23 5.3 4.1: | |
| 8. | 347. 8.98 7.64 4.8 | | 3.7: 359. 12.72 5.07 | | 9. 10.18 6.26 4.3: | |
| 16. | 348. 9.94 7.49 4.0 | | 3.4: 2. 14.01 4.0 | | 12. 11.09 3.4 3.3: | |
| 32. | 345. 10.48 7.32 3.5 | | 3.4: 360. 14.06 3.5 | | 9. 11.48 2.9 2.9: | |
| 48. | | | | | | |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP** (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------|----------|------------|------------|----------|------------|------------|------------|
| 1.0 | 5.72 | 7.59 | 9.0 | 5.4 | 8.42 | 3.95 | 8.2 | 7.6 |
| 2.0 | 6.38 | 7.60 | 7.7 | 4.9 | 9.29 | 4.21 | 7.1 | 6.3 |
| 4.0 | 7.12 | 7.61 | 6.5 | 4.5 | 10.25 | 4.47 | 6.1 | 5.2 |
| 8.0 | 7.95 | 7.62 | 5.6 | 4.2 | 11.31 | 4.72 | 5.3 | 4.3 |
| 16.0 | 8.87 | 7.62 | 4.7 | 3.8 | 12.48 | 4.98 | 4.6 | 3.6 |
| 32.0 | 9.90 | 7.52 | 4.0 | 3.5 | 13.77 | 5.24 | 4.0 | 3.0 |
| 48.0 | 10.56 | 7.31 | 3.7 | 3.3 | 14.59 | 5.39 | 3.7 | 2.6 |
| | | | | | | | | |
| | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI |
| 4.0 | .2610 | .0133 | .015 | .00 | .3369 | .0950 | .051 | .2766 |
| 8.0 | .1456 | .0109 | .038 | .00 | .1859 | .0525 | .093 | .1530 |
| 16.0 | .0812 | .0061 | .069 | .00 | .1026 | .0217 | .126 | .0847 |
| 39.2* | .0337 | -.0006 | -.032 | -.02 | .0031 | | | .0244 |

* OBSERVED DATA

** Least squares fit of log height versus linear temperature

OBSERVED DATA

```

: DATE 24/03/77 TIME 04:00:00 :
: WEATHER RW- :
: TEMP DEG C 2.8 :
: DEW POINT DEG C 0.0 :
: VISIBILITY (MI) 10 :
CLD (TENTHS) : LOW 10 MID HI TOTL 10:
CLD HT (M) : LOW 1525 MID HI :
EXPONENTS : A= -.21 B= -.26 P= .19 :
NET RADIATION : -11.23 MW/CM2 :
RICHARDSON NO.: (4M) .38 (8M) .59 (16M) .95 :
: (39.192M)***** (OBSERVED DATA):
(1/L)*10 : (4M) 6.39 (8M) 7.35 (16M) 9.10 :
USTAR : (4M) .1511 (8M) .1259 (16M) .1005:

```

```

: WD WS TEMP SIGA SIGE :
HEIGHT (M) : (DEG) (M/S) (C) (DEG) (DEG):
-----
1. : : : : :
2. : 25. 3.88 3.47 7.2 :
4. : 16. 4.50 3.32 6.6 :
8. : 10. 5.09 5.7 4.5:
16. : 15. 5.85 6.93 5.2 3.7:
32. : 17. 6.66 4.2 3.0:
48. : 14. 7.16 3.7 2.9:
-----

```

LEAST SQUARES FITTED DATA

```

: WS TEMP** SIGA SIGE :
HEIGHT (M) : (M/S) (C) (DEG) (DEG) :
-----
1.0 : 3.42 1.67 8.7 7.7 :
2.0 : 3.91 2.91 7.5 6.4 :
4.0 : 4.46 4.16 6.5 5.4 :
8.0 : 5.10 5.40 5.6 4.5 :
16.0 : 5.82 6.65 4.9 3.7 :
32.0 : 6.65 7.90 4.2 3.1 :
48.0 : 7.19 8.63 3.9 2.8 :
-----
: DU/DZ DTH/DZ BU*100 RI :
-----
4.0 : .1986 .4250 1.208 :
8.0 : .1135 .2175 1.883 :
16.0 : .0648 .1142 3.023 :
39.2 : .0313 :
-----

```

** Least squares fit of log height vs. linear temperature

OBSERVED DATA

| | | DATE 25/03/77 | TIME 09:00:00 | WEATHER | DATE 25/03/77 | TIME 10:00:00 | WEATHER | DATE 25/03/77 | TIME 11:00:00 | WEATHER | |
|----------------|--|---------------|---------------|-----------------------------------|---------------|---------------|-----------------------------------|---------------|---------------|-----------------------------------|------------|
| | | | | TEMP DEG C 1.0 | | | TEMP DEG C 1.3 | | | TEMP DEG C 2.8 | |
| | | | | DEW POINT DEG C -1.1 | | | DEW POINT DEG C -0.0 | | | DEW POINT DEG C -0.0 | |
| | | | | VISIBILITY (MI) 20 | | | VISIBILITY (MI) 20 | | | VISIBILITY (MI) 20 | |
| CLD (TENTHS) | | | | TOTAL 10:LOW 10 MID HI | | | TOTAL 10:LOW 10 MID HI | | | TOTAL 10:LOW 10 MID HI | |
| CLD HT (M) | | | | LOW 1830 MID HI | | | LOW 1830 MID HI | | | LOW 1830 MID HI | |
| EXPONENTS | | | | A= -.13 B= -.19 P= .12 | | | A= -.07 B= .08 P= .13 | | | A= -.15 B= .15 P= .09 | |
| NET RADIATION | | | | 18.14 MW/CM2 | | | 40.26 MW/CM2 | | | 39.49 MW/CM2 | |
| RICHARDSON NO. | | | | (4M) -.17 (8M) -.50 (16M) -1.77 | | | (4M) -.47 (8M) -1.31 (16M) -2.64 | | | (4M) -.70 (8M) -2.23 (16M) -6.07 | |
| | | | | (39.192M) -.12 (OBSERVED DATA) | | | (39.192M) .21 (OBSERVED DATA) | | | (39.192M) 1.01 (OBSERVED DATA) | |
| (L/L)*10 | | | | (4M) -.482 (8M) -.677 (16M) -1.17 | | | (4M) -1.28 (8M) -1.74 (16M) -1.74 | | | (4M) -1.89 (8M) -2.94 (16M) -3.99 | |
| USTAR | | | | (4M) .2600 (8M) .2623 (16M) .2794 | | | (4M) .2869 (8M) .2981 (16M) .3049 | | | (4M) .2592 (8M) .2697 (16M) .2834 | |
| | | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
| HEIGHT (M) | | | | | | | | | | | |
| 1. | | 342. | 2.72 | .62 | 8.0 | 7.7 | 326. | 2.73 | 3.85 | 10.5 | 23. |
| 2. | | 326. | 3.25 | | 7.9 | 6.8 | 308. | 3.26 | 1.88 | 10.5 | 2.41 |
| 4. | | 323. | 3.53 | .34 | 7.3 | 5.3 | 307. | 3.64 | .71 | 9.4 | 2.93 |
| 8. | | 329. | 3.76 | .05 | 5.7 | 4.2 | 316. | 3.86 | 1.28 | 8.9 | 309. |
| 16. | | 329. | 3.72 | -.40 | 5.9 | 4.4 | 312. | 4.03 | .90 | 8.2 | 5.1 |
| 32. | | 326. | 4.26 | -.62 | 5.6 | 3.5 | 312. | 4.36 | -.14 | 8.8 | 313. |
| 48. | | | | | | | | | -.26 | 8.1 | 5.6 |
| | | | | | | | | | | | 3.15 |
| | | | | | | | | | | | 2.41 |
| | | | | | | | | | | | 2.93 |
| | | | | | | | | | | | 2.91 |
| | | | | | | | | | | | 3.18 |
| | | | | | | | | | | | 3.15 |
| | | | | | | | | | | | 3.46 |
| | | | | | | | | | | | .71 |
| | | | | | | | | | | | 10.4 |
| | | | | | | | | | | | 8.9 |

LEAST SQUARES FITTED DATA

| | | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|--|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|
| HEIGHT (M) | | | | | | | | | | | |
| 1.0 | | 2.65 | .66 | 9.0 | 7.7 | 7.7 | 2.63 | 2.41 | 10.5 | 4.1 | 2.40 |
| 2.0 | | 2.87 | .62 | 8.3 | 6.8 | 6.8 | 2.88 | 2.26 | 10.0 | 4.3 | 2.56 |
| 4.0 | | 3.12 | .52 | 7.6 | 5.9 | 5.9 | 3.16 | 1.98 | 9.6 | 4.5 | 2.73 |
| 8.0 | | 3.39 | .35 | 6.9 | 5.2 | 5.2 | 3.46 | 1.45 | 9.1 | 4.8 | 2.91 |
| 16.0 | | 3.67 | .04 | 6.3 | 4.5 | 4.5 | 3.80 | .60 | 8.7 | 5.1 | 3.10 |
| 32.0 | | 3.99 | -.40 | 5.8 | 4.0 | 4.0 | 4.17 | -.31 | 8.3 | 5.4 | 3.30 |
| 48.0 | | 4.18 | -.62 | 5.5 | 3.7 | 3.7 | 4.40 | -.16 | 8.0 | 5.6 | 3.43 |
| | | DU/DZ | DTM/DZ | BU*100 | RI | RI | DU/DZ | DTM/DZ | BU*100 | RI | RI |
| 4.0 | | .0852 | -.0343 | -.202 | -.06 | -.06 | .0975 | -.1256 | -.717 | -.24 | .0582 |
| 8.0 | | .0463 | -.0299 | -.5966 | -.35 | -.35 | .0535 | -.1049 | -1.996 | -2.07 | .0310 |
| 16.0 | | .0251 | -.0312 | -2.127 | -2.87 | -2.87 | .0293 | -.0635 | -4.026 | -10.38 | .0165 |
| 39.2* | | .0338 | -.0037 | -1.318 | -5.46 | -5.46 | .0206 | .0025 | .790 | .00 | .0194 |
| | | | | | | | | | | | .0106 |
| | | | | | | | | | | | 5.397 |
| | | | | | | | | | | | .00 |

* OBSERVED DATA

OBSERVED DATA

```

: DATE 25/03/77 TIME 12:00:00 : DATE 25/03/77 TIME 13:00:00 : DATE 25/03/77 TIME 14:00:00 :
: WEATHER : WEATHER : WEATHER :
: TEMP DEG C 3.9 : TEMP DEG C 5.6 : TEMP DEG C 6.7 :
: DEW POINT DEG C -0.3 : DEW POINT DEG C -1.1 : DEW POINT DEG C -1.1 :
: VISIBILITY (MI) 20 : VISIBILITY (MI) 20 : VISIBILITY (MI) 30 :
: CLD (TENTHS) : LOW 4 MID 10 HI TOTAL 10:LOW 3 MID 6 HI TOTAL 9:LOW 9 MID HI TOTAL 9:
: CLO HT (M) : LOW 1220 MID 3050 HI : LOW 1220 MID 3050 HI : LOW 1830 MID HI :
: EXPONENTS : A= .01 B= .04 P= .14 : A= -.34 B= .15 P= .03 : A= .03 B= .32 P= .00 :
: NET RADIATION : 33.00 MW/CM2 : 50.73 MW/CM2 : 54.59 MW/CM2 :
: RICHARDSON NO.: (4M) -.08 (8M) -.46(16M)-2.88 : (4M)-14.1 (8M)-44.9(16M)-98.3 : (4M)***** (8M)***** (16M)***** :
: (1/L)*10 : (39.192M)***** (OBSERVED DATA): (39.192M) -.13 (OBSERVED DATA): (39.192M) 3.75 (OBSERVED DATA):
: USTAR : (4M) -.23 (8M) -.62 (16M)-1.90: (4M)-36.9 (8M)-58.8 (16M)-61.4 : (4M)***** (8M)***** (16M)***** :
: : (4M).1557 (8M).1644 (16M).1912: (4M).2621 (8M).2989 (16M).2967 : (4M) (8M) (16M) :
:
: WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE :
: HEIGHT (M) : (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) :
: 1. : 320. 1.74 3.71 13.6 : 336. 1.32 4.44 46.9 : 162. 1.25 5.43 :
: 2. : 310. 2.05 3.28 13.4 : 326. 1.45 3.97 49.4 : 152. 1.24 5.28 69.1 :
: 4. : 304. 2.07 3.34 13.9 10.7: 316. 1.36 4.05 51.6 19.2: 148. 1.23 4.85 64.9 19.4:
: 16. : 313. 2.35 3.10 13.3 10.4: 324. 1.47 3.84 39.4 19.5: 156. 1.38 4.73 69.1 23.9:
: 32. : 315. 2.56 2.82 13.1 11.3: 316. 1.35 3.56 17.9 25.1: 138. 1.33 4.52 79.0 31.0:
: 48. : 313. 2.78 1.41 14.8 11.1: 313. 1.56 3.39 19.4 23.7: 159. 1.17 4.53 71.5 33.6:

```

LEAST SQUARES FITTED DATA

```

: WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE :
: HEIGHT (M) : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) :
: 1.0 : 1.61 3.59 13.3 9.8 : 1.32 4.41 76.4 13.6 : 1.26 5.25 65.9 10.1 :
: 2.0 : 1.77 3.58 13.4 10.0 : 1.35 4.36 60.5 15.2 : 1.26 5.21 67.2 12.5 :
: 4.0 : 1.95 3.54 13.5 10.2 : 1.38 4.27 47.9 16.8 : 1.26 5.12 68.5 15.6 :
: 8.0 : 2.14 3.47 13.6 10.5 : 1.40 4.10 38.0 18.7 : 1.26 4.95 69.8 19.4 :
: 16.0 : 2.36 3.25 13.7 10.8 : 1.43 3.82 30.1 20.8 : 1.27 4.69 71.2 24.2 :
: 32.0 : 2.59 2.55 13.8 11.0 : 1.46 3.48 23.8 23.1 : 1.27 4.45 72.6 30.1 :
: 48.0 : 2.74 1.51 13.9 11.2 : 1.48 3.43 20.8 24.6 : 1.27 4.56 73.4 34.2 :
:
: DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI :
: 4.0 : .0617 -.0082 -.122 -.04 : .0091 -.0330 -.986 -.03 : .0008 -.0324 -1.149 -.04 :
: 8.0 : .0339 -.0148 -.734 -.46 : .0046 -.0273 -3.139 -.52 : .0004 -.0253 -3.577 -.68 :
: 16.0 : .0186 -.0282 -4.618 -12.87 : .0024 -.0160 -7.060 -6.98 : .0002 -.0111 -6.254 -5.65 :
: 39.2* : .0137 -.0781 -60.409***** : .0131 -.0006 -1.630 -8.08 : -.0100 .0106 36.387 .00 :

```

* OBSERVED DATA

OBSERVED DATA

```

: DATE 25/03/77 TIME 15:00:00 :
: WEATHER :
: TEMP DEG C 6.7 :
: DEW POINT DEG C -1.7 :
: VISIBILITY (MI) 30 :
CLD (TENTHS) : LOW 8 MID HI TOTL 8:
CLD HT (M) : LOW 1830 MID HI :
EXPONENTS : A= -.12 B= .24 P= .09** :
NET RADIATION : 41.66 MW/CM2 :
RICHARDSON NO. : (4M) -2.09* (8M) -1.91* (16M) -75.5 :
: (39.192M)***** (OBSERVED DATA):
(1/L)*10 : (4M) -5.52* (8M) -2.50* (16M) -49.4 :
USTAR : (4M) .1843* (8M) .1665* (16M) .3230 :

```

```

: WD WS TEMP SIGA SIGE :
HEIGHT (M) : (DEG) (M/S) (C) (DEG) (DEG):
-----
1. : 6.27 :
2. : 154. 1.62 6.08 21.5 :
4. : 142. 1.64 5.70 20.9 :
8. : 133. 1.84 5.54 19.1 12.4:
16. : 135. 1.85 5.38 19.2 12.0:
32. : 126. 1.78 5.20 16.5 16.2:
48. : 115. 1.74 4.97 14.5 18.5:

```

LEAST SQUARES FITTED DATA

```

: WS TEMP SIGA SIGE :
HEIGHT (M) : (M/S) (C) (DEG) (DEG) :
-----
1.0 : 1.63 6.06 24.3 6.9 :
2.0 : 1.66 6.00 22.4 8.2 :
4.0 : 1.69 5.90 20.7 9.7 :
8.0 : 1.73 5.71 19.1 11.5 :
16.0 : 1.76 5.40 17.6 13.6 :
32.0 : 1.80 5.04 16.3 16.1 :
48.0 : 1.82 5.03 15.5 17.7 :

```

```

: DU/DZ DTH/DZ BU*100 RI :
-----
4.0 : .0111 -.0386 -.756 -.02 :
8.0 : .0056 -.0317 -2.390 -.32 :
16.0 : .0029 -.0180 -5.207 -3.90 :
39.2* : -.0025 -.0044 -7.623 -23.51 :

```

* OBSERVED DATA

** OBSERVED DATA
FOR 2-16M

| | DATE 28/03/77 | TIME 09:00:00 | WEATHER | DATE 28/03/77 | TIME 10:00:00 | WEATHER | DATE 28/03/77 | TIME 11:00:00 |
|----------------|--|---------------|-----------------------------------|---------------|-----------------------------------|-----------------------|---------------|---------------|
| | | | TEMP DEG C -0.6 | | TEMP DEG C 0.2 | TEMP DEG C 1.1 | | |
| | | | DEW POINT DEG C -10.9 | | DEW POINT DEG C -11.1 | DEW POINT DEG C -12.2 | | |
| | | | VISIBILITY (MI) 40 | | VISIBILITY (MI) 30 | VISIBILITY (MI) 20 | | |
| CLD (TENTHS) | LOW 7 MID HI | TOTAL | 7:LOW 8 MID HI | 1 TOTAL | 9:LOW 8 MID HI | 1 TOTAL | 9: | |
| CLD HT (M) | LOW 1525 MID HI | | LOW 1525 MID HI | 7620 | LOW 1525 MID HI | 7620 | | |
| EXPONENTS | A = -0.19 B = -0.16 P = 0.17 | | A = -0.22 B = -0.08 P = 0.16 | | A = -0.18 B = -0.07 P = 0.15 | | | |
| NET RADIATION | | MW/CM2 | | 29.86 MW/CM2 | | 41.66 MW/CM2 | | |
| RICHARDSON NO. | (4M) -0.03 (8M) -0.07 (16M) -0.14 | | (4M) -0.04 (8M) -0.11 (16M) -0.22 | | (4M) -0.08 (8M) -0.22 (16M) -0.44 | | | |
| | (39.192M) -0.04 (OBSERVED DATA): (39.192M) -0.03 (OBSERVED DATA): (39.192M) -1.95 (OBSERVED DATA): | | (4M) -0.11 (16M) -0.10 | | (4M) -0.15 (16M) -0.31 | | | |
| (L/L)*10 | (4M) -0.08 (8M) -0.11 (16M) -0.13 | | (4M) -0.13 (8M) -0.16 (16M) -0.15 | | (4M) -0.24 (8M) -0.31 (16M) -0.30 | | | |
| USTAR | (4M).4948 (8M).4997 (16M).5062 | | (4M).4819 (8M).4816 (16M).4875 | | (4M).4115 (8M).4140 (16M).4197 | | | |

| HEIGHT (M) | : WD :(DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | |
|------------|----------------|-------------|-------------|---------------|---------------|-------------|-------------|-------------|---------------|---------------|-------------|-------------|-------------|---------------|---------------|--|
| 1. | : | 5.73 | -31 | 7.9 | : | 327. | 5.53 | .04 | 10.0 | : | 316. | 4.45 | 1.36 | 12.2 | : | |
| 2. | : | 326. | | | | | | | | | | | | | | |
| 4. | : | 315.. | -70 | 6.7 | : | 315. | 6.06 | -.46 | 8.3 | : | 304. | 5.31 | .88 | 10.4 | : | |
| 8. | : | 307. | -83 | 5.6 | | 4.5: | 308. | -.60 | 7.4 | | 4.2: | 5.83 | .57 | 9.8 | 5.5: | |
| 16. | : | 314. | -1.16 | 5.2 | | 3.7: | 315. | -.91 | 6.2 | | 3.5: | 6.29 | .16 | 8.7 | 5.1: | |
| 32. | : | 313. | -1.55 | 4.7 | | 3.6: | 315. | -1.32 | 5.6 | | 3.8: | 7.07 | -.12 | 7.2 | 4.9: | |
| 48. | : | 0. | -1.78 | 0 | | 0: | 0. | -1.54 | 0 | | 0: | 7.28 | -.43 | 0 | 0: | |

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1.0 | 5.02 | -32 | 8.8 | 6.1 | 4.95 | .01 | 11.6 | 4.8 | 4.17 | 1.35 | 14.1 | 6.3 |
| 2.0 | 5.66 | -39 | 7.7 | 5.5 | 5.52 | -.06 | 10.0 | 4.5 | 4.63 | 1.26 | 12.4 | 6.0 |
| 4.0 | 6.39 | -.52 | 6.8 | 4.9 | 6.16 | -.21 | 8.6 | 4.3 | 5.13 | 1.09 | 10.9 | 5.7 |
| 8.0 | 7.21 | -.75 | 5.9 | 4.4 | 6.88 | -.47 | 7.4 | 4.0 | 5.69 | .77 | 9.6 | 5.4 |
| 16.0 | 8.14 | -1.15 | 5.2 | 3.9 | 7.68 | -.92 | 6.4 | 3.8 | 6.32 | .24 | 8.4 | 5.2 |
| 32.0 | 9.19 | -1.64 | 4.6 | 3.5 | 8.57 | -1.44 | 5.5 | 3.6 | 7.01 | -.35 | 7.4 | 4.9 |
| 48.0 | 9.86 | -1.74 | 4.2 | 3.2 | 9.14 | -1.49 | 5.0 | 3.5 | 7.45 | -.34 | 6.9 | 4.8 |
| | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI |
| 4.0 | .2585 | -.0505 | -.071 | -.03 | .2263 | -.0585 | -.088 | -.04 | .1778 | -.0724 | -.157 | -.04 |
| 8.0 | .1459 | -.0427 | -.189 | -.07 | .1263 | -.0491 | -.239 | -.11 | .0986 | -.0605 | -.427 | -.22 |
| 16.0 | .0823 | -.0272 | -.378 | -.29 | .0705 | -.0304 | -.475 | -.44 | .0547 | -.0367 | -.844 | -.88 |
| 39.2* | .0600 | -.0044 | -.273 | -.23 | .0625 | -.0037 | -.274 | -.21 | .0131 | -.0094 | -1.007 | -1.95 |

A-142

| | DATE | 28/03/77 | TIME | 12:00:00 | DATE | 28/03/77 | TIME | 13:00:00 | DATE | 28/03/77 | TIME | 14:00:00 | | | |
|----------------|---|--------------------------------|--------------------------------|----------|---------------------------|----------|--------------|----------|-----------------|----------|-------|----------|------|-------|-------|
| CLD (TENTHS) | WEATHER | | | | WEATHER | | | | WEATHER | | | | | | |
| CLD HT (M) | TEMP DEG C | 3.0 | | | TEMP DEG C | 3.2 | | | TEMP DEG C | | | 6.4 | | | |
| EXPONENTS | DEW POINT DEG C | -12.3 | | | DEW POINT DEG C | -14.3 | | | DEW POINT DEG C | | | -14.4 | | | |
| NET RADIATION | VISIBILITY (MI) | 20 | | | VISIBILITY (MI) | 20 | | | VISIBILITY (MI) | | | 30 | | | |
| RICHARDSON NO. | LOW 8 MID HI | 1 TOTL | 9:LOW | 7 MID HI | 2 TOTL | 9:LOW | 6 MID HI | TOTL | 6 | | | | | | |
| 61/L1*10 | LOW 1525 MID | HI 7620 | LOW 1525 MID | HI 7620 | LOW 1525 MID | HI 7620 | LOW 1525 MID | HI | | | | | | | |
| USTAR | A = -.08 B = .03 P = .13 | | A = -.05 B = .00 P = .15 | | A = -.10 B = -.05 P = .16 | | | | | | | | | | |
| | 29.73 MW/CM2 | | 48.92 MW/CM2 | | 19.89 MW/CM2 | | | | | | | | | | |
| | (4M) -.07 (8M) -.18 (16M) -.36 | (4M) -.08 (8M) -.23 (16M) -.47 | (4M) -.04 (8M) -.10 (16M) -.20 | | | | | | | | | | | | |
| | (39.192M) -.66 (OBSERVED DATA): (39.192M) -.09 (OBSERVED DATA): (39.192M) -.64 (OBSERVED DATA): | | | | | | | | | | | | | | |
| | (4M) -.20 (8M) -.26 (16M) -.25 | (4M) -.25 (8M) -.32 (16M) -.32 | (4M) -.11 (8M) -.14 (16M) -.14 | | | | | | | | | | | | |
| | (4M).5176 (8M).5134 (16M).5141 | (4M).4235 (8M).4265 (16M).4332 | (4M).4877 (8M).4881 (16M).4957 | | | | | | | | | | | | |
| HEIGHT (M) | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE |
| | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) |
| 1. | | 5.82 | 1.84 | 16.0 | | 315. | 4.77 | 2.75 | | | 291. | 5.76 | 2.98 | | |
| 2. | 334. | 6.41 | .91 | 15.8 | | 302. | 5.26 | 2.56 | 18.7 | | | 5.70 | 2.73 | 13.3 | |
| 4. | 323. | 7.42 | .70 | 15.4 | 4.2 | 294. | 5.87 | 1.98 | 17.9 | | 281. | 7.38 | 2.21 | 11.5 | |
| 8. | 316. | 8.16 | .37 | 13.7 | 4.2 | 301. | 6.54 | 1.70 | 18.3 | 5.5 | 273. | 8.18 | 2.02 | 11.6 | 5.0 |
| 16. | 323. | 8.52 | .00 | 12.8 | 4.3 | 302. | 6.93 | 1.28 | 17.4 | 5.3 | 280. | 8.69 | 1.69 | 11.5 | 4.1 |
| 32. | 323. | 8.83 | -.27 | 0 | 0 | 0 | 7.86 | .86 | 15.9 | 5.6 | 281. | 9.20 | 1.50 | 9.9 | 4.6 |
| 48. | 0. | | | | | | | .57 | 0 | 0 | | | 1.05 | 0 | 0 |

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1.0 | 5.41 | 1.52 | 17.4 | 3.9 | 4.29 | 2.52 | 19.9 | 5.4 | 4.99 | 2.69 | 14.4 | 5.2 |
| 2.0 | 5.94 | 1.43 | 16.4 | 4.0 | 4.76 | 2.42 | 19.1 | 5.4 | 5.59 | 2.62 | 13.4 | 5.0 |
| 4.0 | 6.52 | 1.25 | 15.5 | 4.1 | 5.28 | 2.24 | 18.4 | 5.4 | 6.26 | 2.48 | 12.5 | 4.8 |
| 8.0 | 7.15 | .92 | 14.6 | 4.1 | 5.85 | 1.89 | 17.7 | 5.5 | 7.01 | 2.22 | 11.7 | 4.7 |
| 16.0 | 7.85 | .38 | 13.8 | 4.2 | 6.49 | 1.32 | 17.1 | 5.5 | 7.85 | 1.78 | 10.9 | 4.5 |
| 32.0 | 8.61 | -.22 | 13.0 | 4.3 | 7.20 | .66 | 16.4 | 5.5 | 8.79 | 1.24 | 10.2 | 4.4 |
| 48.0 | 9.09 | -.18 | 12.6 | 4.3 | 7.65 | .65 | 16.1 | 5.5 | 9.39 | 1.15 | 9.8 | 4.3 |
| | DU/DZ | DTM/DZ | BU*100 | RI | DU/DZ | DTM/DZ | BU*100 | RI | DU/DZ | DTM/DZ | BU*100 | RI |
| 4.0 | .2020 | -.0747 | -.100 | -.03 | .1825 | -.0791 | -.162 | -.04 | .2365 | -.0571 | -.083 | -.04 |
| 8.0 | .1108 | -.0623 | -.279 | -.18 | .1012 | -.0665 | -.443 | -.23 | .1324 | -.0483 | -.224 | -.10 |
| 16.0 | .0608 | -.0375 | -.558 | -.36 | .0561 | -.0413 | -.895 | -.94 | .0741 | -.0308 | -.456 | -.40 |
| 39.2* | .0194 | -.0069 | -.505 | -.66 | .0581 | -.0081 | -.827 | -2.16 | .0319 | -.0181 | -1.249 | -3.51 |

A-143

OBSERVED DATA

```

: DATE 28/03/77 TIME 15:00:00 :
: WEATHER :
: TEMP DEG C 2.8 :
: DEW POINT DEG C -13.9 :
: VISIBILITY (MI) 20 :
CLD (TENTHS) : LOW 10 MID HI TOTL 10:
CLD HT (M) : LOW 1830 MID HI :
EXPONENTS : A= -.11 B= -.02 P= .14 :
NET RADIATION : MW/CM2 :
RICHARDSON NO. : (4M) -.06 (8M) -.17 (16M) -.35 :
: (39.192M) -.50 (OBSERVED DATA):
(1/L)*10 : (4M) -.18 (8M) -.24 (16M) -.24:
USTAR : (4M).3487 (8M).3461 (16M).3472:

```

```

: WD WS TEMP SIGA SIGE :
HEIGHT (M) : (DEG) (M/S) (C) (DEG) (DEG):
-----
1. : 1.08 :
2. : 287. 4.00 .97 18.3 :
4. : 279. 4.25 .54 16.2 :
8. : 272. 4.97 .54 15.8 5.9:
16. : 280. 5.57 .31 15.4 4.8:
32. : 283. 5.74 .08 13.3 5.8:
48. : 6.06 -.17 :

```

LEAST SQUARES FITTED DATA

```

: WS TEMP SIGA SIGE :
HEIGHT (M) : (M/S) (C) (DEG) (DEG) :
-----
1.0 : 3.64 .92 20.0 5.7 :
2.0 : 4.01 .87 18.5 5.7 :
4.0 : 4.40 .78 17.1 5.6 :
8.0 : 4.84 .61 15.9 5.5 :
16.0 : 5.32 .33 14.7 5.5 :
32.0 : 5.84 -.03 13.7 5.4 :
48.0 : 6.18 -.12 13.1 5.4 :

```

```

: DU/DZ DTH/DZ BU*100 RI :
-----
4.0 : .1387 -.0329 -.097 -.03 :
8.0 : .0762 -.0276 -.270 -.17 :
16.0 : .0419 -.0170 -.550 -.51 :
39.2* : .0200 -.0056 -.895 -1.74 :

```

* OBSERVED DATA

OBSERVED DATA

| DATE 28/03/77 TIME 16:00:00 | | | | DATE 28/03/77 TIME 17:00:00 | | | | DATE 28/03/77 TIME 18:00:00 | | | | |
|-----------------------------|---|---|---|---|---|---|---|---|---|---|---|------|
| WEATHER | | | | WEATHER | | | | WEATHER | | | | |
| TEMP DEG C | 3.2 | | | TEMP DEG C | 2.2 | | | TEMP DEG C | 1.7 | | | |
| DEW POINT DEG C | -12.2 | | | DEW POINT DEG C | -11.6 | | | DEW POINT DEG C | -11.3 | | | |
| VISIBILITY (MI) | 30 | | | VISIBILITY (MI) | 30 | | | VISIBILITY (MI) | 30 | | | |
| CLD (TENTHS) | LOW 10 MID HI | TOTL | 10:LOW 10 MID HI | TOTL | 10:LOW 10 MID HI | TOTL | 10:LOW 10 MID HI | TOTL | 10:LOW 10 MID HI | TOTL | 10:LOW 10 MID HI | |
| CLD HT (M) | LOW 1830 MID | HI | LOW 1830 MID | HI | LOW 1830 MID | HI | LOW 1830 MID | HI | LOW 1830 MID | HI | LOW 1830 MID | |
| EXPONENTS | A = -.09 B = -.07 P = .14 | | A = -.11 B = .00 P = .12 | | A = -.19 B = -.14 P = .21 | | | | | | | |
| NET RADIATION | MW/CM2 | | | 9.07 MW/CM2 | | | -1.81 MW/CM2 | | | | | |
| RICHARDSON NO. | (4M) -.04 (8M) -.11(16M) -.23 | (4M) -.09 (8M) -.25(16M) -.56 | (4M) -.01 (8M) .01(16M) .02 | (39.192M) -.20 (OBSERVED DATA): | (39.192M) -1.06 (OBSERVED DATA): | (39.192M) -.11 (OBSERVED DATA): | (4M) -.02 (8M) .02 (16M) .02 | (4M).3953 (8M).3900 (16M).3905 | (4M).2208 (8M).2188 (16M).2196 | (4M).3390 (8M).3427 (16M).3441 | | |
| (1/L)*10 | (4M) -.12 (8M) -.16 (16M) -.16 | (4M) -.26 (8M) -.35 (16M) -.38 | | | | | | | | | | |
| USTAR | | | | | | | | | | | | |
| HEIGHT (M) | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | |
| 1. | 263. | 4.77 | .48 | 12.5 | 264. | 2.63 | .46 | 13.6 | 322. | 4.03 | .68 | 10.2 |
| 2. | 255. | 4.74 | -.02 | 11.6 | 258. | 2.56 | .04 | 12.0 | 311. | 4.58 | .73 | 8.6 |
| 4. | 248. | 5.63 | .02 | 10.7 | 5.1: 250. | 3.01 | .17 | 11.2 | 6.7: 302. | 5.40 | .34 | 8.1 |
| 8. | 257. | 6.29 | -.18 | 10.1 | 4.6: 260. | 3.34 | .02 | 9.2 | 6.0: 311. | 6.11 | .66 | 8.1 |
| 16. | 258. | 6.70 | -.46 | 10.0 | 4.6: 262. | 3.49 | -.18 | 10.5 | 6.7: 310. | 7.26 | .60 | 6.9 |
| 32. | | | -.69 | | | | -.42 | | | | .44 | 5.9 |
| 48. | | | | | | | | | | | .22 | 3.7 |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1.0 | 4.17 | .35 | 13.1 | 5.8 | 2.32 | .36 | 14.2 | 6.4 | 3.45 | .61 | 11.6 | 6.0 |
| 2.0 | 4.60 | .31 | 12.3 | 5.5 | 2.53 | .33 | 13.1 | 6.4 | 4.00 | .61 | 10.1 | 5.5 |
| 4.0 | 5.06 | .23 | 11.6 | 5.3 | 2.74 | .28 | 12.1 | 6.4 | 4.63 | .61 | 8.9 | 5.0 |
| 8.0 | 5.57 | .07 | 10.9 | 5.0 | 2.98 | .19 | 11.2 | 6.4 | 5.36 | .60 | 7.8 | 4.5 |
| 16.0 | 6.13 | -.19 | 10.3 | 4.8 | 3.24 | .02 | 10.4 | 6.5 | 6.21 | .57 | 6.8 | 4.1 |
| 32.0 | 6.75 | -.54 | 9.7 | 4.5 | 3.52 | -.24 | 9.6 | 6.5 | 7.18 | .44 | 6.0 | 3.7 |
| 48.0 | 7.14 | -.66 | 9.4 | 4.4 | 3.70 | -.39 | 9.1 | 6.5 | 7.83 | .22 | 5.5 | 3.5 |
| | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI |
| 4.0 | .1626 | -.0291 | -.065 | -.04 | .0762 | -.0143 | -.109 | -.04 | .2269 | .0084 | .022 | .00 |
| 8.0 | .0895 | -.0246 | -.182 | -.11 | .0414 | -.0122 | -.314 | -.13 | .1314 | .0067 | .053 | .00 |
| 16.0 | .0493 | -.0155 | -.380 | -.23 | .0225 | -.0080 | -.695 | -.56 | .0760 | .0033 | .078 | .00 |
| 39.2* | .0278 | -.0044 | -.507 | -.71 | .0130 | -.0050 | -2.147 | -8.99 | .0355 | -.0037 | -.365 | -.40 |

* OBSERVED DATA

OBSERVED DATA

| | DATE 28/03/77 | TIME 19:00:01 | DATE 28/03/77 | TIME 20:00:00 | DATE 28/03/77 | TIME 21:00:00 | |
|----------------|--|---|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|--|
| | WEATHER | | WEATHER | | WEATHER | | |
| | TEMP DEG C 0.6 | | TEMP DEG C -0.1 | | TEMP DEG C -0.4 | | |
| | DEW POINT DEG C -10.0 | | DEW POINT DEG C -8.9 | | DEW POINT DEG C -7.7 | | |
| | VISIBILITY (MI) 30 | | VISIBILITY (MI) 20 | | VISIBILITY (MI) 20 | | |
| CLD (TENTHS) | LOW 3 MID 7 HI | TOTAL 10 | LOW 3 MID 7 HI | TOTAL 10 | LOW 3 MID 7 HI | TOTAL 10 | |
| CLD HT (M) | LOW 1220 MID 2440 HI | | LOW 1220 MID 2440 HI | | LOW 1220 MID 2440 HI | | |
| EXPONENTS | A = -.20 B = -.20 P = .22 | | A = -.25 B = -.26 P = .18 | | A = -.25 B = -.32 P = .26 | | |
| NET RADIATION | -6.56 MW/CM2 | | -6.56 MW/CM2 | | -7.26 MW/CM2 | | |
| RICHARDSON NO. | (4M) .01 (8M) .03 (16M) .07 | (4M) .01 (8M) .02 (16M) .03 | (4M) .01 (8M) .02 (16M) .03 | (4M) .01 (8M) .02 (16M) .03 | (4M) .01 (8M) .02 (16M) .03 | (4M) .01 (8M) .02 (16M) .03 | |
| | (39.192M) .27 (OBSERVED DATA) | (39.192M) -.05 (OBSERVED DATA) | (39.192M) -.05 (OBSERVED DATA) | (39.192M) -.05 (OBSERVED DATA) | (39.192M) -.05 (OBSERVED DATA) | (39.192M) -.05 (OBSERVED DATA) | |
| (1/L)*10 | (4M) .03 (8M) .06 (16M) .09 | (4M) .02 (8M) .02 (16M) .02 | (4M) .02 (8M) .02 (16M) .02 | (4M) .02 (8M) .02 (16M) .02 | (4M) .02 (8M) .02 (16M) .02 | (4M) .02 (8M) .02 (16M) .02 | |
| USTAR | (4M) .3345 (8M) .3231 (16M) .3085 | (4M) .4752 (8M) .4587 (16M) .4535 | (4M) .4752 (8M) .4587 (16M) .4535 | (4M) .4752 (8M) .4587 (16M) .4535 | (4M) .4752 (8M) .4587 (16M) .4535 | (4M) .4752 (8M) .4587 (16M) .4535 | |
| HEIGHT (M) | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | (DEG) (M/S) (C) (DEG) (DEG) (M/S) (C) (DEG) (DEG) (M/S) (C) (DEG) (DEG) (M/S) (C) (DEG) (DEG) (M/S) (C) (DEG) (DEG) | | | | | |
| 1. | -1.88 | | -1.37 | | -2.40 | | |
| 2. | 4.26 | 278. | 4.26 | 278. | 4.26 | 278. | |
| 4. | 4.06 | 270. | 4.06 | 270. | 4.06 | 270. | |
| 8. | 5.33 | 261. | 5.33 | 261. | 5.33 | 261. | |
| 16. | 6.34 | 269. | 6.34 | 269. | 6.34 | 269. | |
| 32. | 7.39 | 269. | 7.39 | 269. | 7.39 | 269. | |
| 48. | -1.82 | | -1.70 | | -2.38 | | |

LEAST SQUARES FITTED DATA

| HEIGHT (M) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : |
|--------------|------------|------------|--------------|--------------|------------|------------|--------------|--------------|------------|------------|--------------|--------------|
| 1.0 : | 3.35 : | -1.90 : | 8.5 : | 6.6 : | 5.02 : | -1.41 : | 9.1 : | 7.9 : | 1.55 : | -2.41 : | 10.4 : | 8.3 : |
| 2.0 : | 3.91 : | -1.89 : | 7.4 : | 5.8 : | 5.71 : | -1.41 : | 7.6 : | 6.6 : | 1.86 : | -2.39 : | 8.8 : | 6.7 : |
| 4.0 : | 4.57 : | -1.88 : | 6.4 : | 5.0 : | 6.49 : | -1.40 : | 6.4 : | 5.5 : | 2.22 : | -2.35 : | 7.3 : | 5.3 : |
| 8.0 : | 5.33 : | -1.85 : | 5.6 : | 4.3 : | 7.37 : | -1.39 : | 5.4 : | 4.6 : | 2.66 : | -2.29 : | 6.2 : | 4.3 : |
| 16.0 : | 6.23 : | -1.80 : | 4.9 : | 3.8 : | 8.38 : | -1.39 : | 4.5 : | 3.8 : | 3.19 : | -2.20 : | 5.2 : | 3.4 : |
| 32.0 : | 7.27 : | -1.77 : | 4.3 : | 3.3 : | 9.52 : | -1.48 : | 3.8 : | 3.2 : | 3.82 : | -2.19 : | 4.3 : | 2.8 : |
| 48.0 : | 7.96 : | -1.83 : | 3.9 : | 3.0 : | 10.26 : | -1.70 : | 3.4 : | 2.8 : | 4.24 : | -2.39 : | 3.9 : | 2.4 : |
| ----- | | | | | | | | | | | | |
| : | DU/DZ : | DTH/DZ : | BU*100 : | RI : | DU/DZ : | DTH/DZ : | BU*100 : | RI : | DU/DZ : | DTH/DZ : | BU*100 : | RI : |
| ----- | | | | | | | | | | | | |
| 4.0 : | .2366 : | .0179 : | .049 : | .00 : | .2774 : | .0131 : | .018 : | .00 : | .1344 : | .0271 : | .317 : | .00 : |
| 8.0 : | .1381 : | .0162 : | .132 : | .00 : | .1576 : | .0107 : | .046 : | .00 : | .0805 : | .0228 : | .743 : | .00 : |
| 16.0 : | .0806 : | .0130 : | .310 : | .00 : | .0896 : | .0059 : | .078 : | .00 : | .0482 : | .0142 : | 1.290 : | .00 : |
| 39.2* : | .0355 : | .0094 : | .890 : | .00 : | .0446 : | -.0025 : | -.142 : | -.05 : | .0252 : | .0006 : | .215 : | .00 : |

* OBSERVED DATA

OBSERVED DATA

| | DATE 28/03/77 | TIME 22:00:00 | DATE 28/03/77 | TIME 23:00:00 | DATE 29/03/77 | TIME 00:00:00 | | | | |
|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|---------------|-----------------|---------------|------------|
| | WEATHER | | | WEATHER | | | | | | |
| | TEMP DEG C | -0.9 | TEMP DEG C | -2.8 | TEMP DEG C | -3.3 | | | | |
| | DEW POINT DEG C | -7.6 | DEW POINT DEG C | -8.9 | DEW POINT DEG C | -8.9 | | | | |
| | VISIBILITY (MI) | 20 | VISIBILITY (MI) | 20 | VISIBILITY (MI) | 20 | | | | |
| CLD (TENTHS) | LOW | 8 HI | TOTL | 8:LOW | MID 4 HI | TOTL | 7:LOW | | | |
| CLD HT (M) | LOW | MID 2440 HI | | LOW | MID 2440 HI | | LOW | | | |
| EXPONENTS | A = -.43 | B = -.31 | P = -.03 | A = -.47 | B = .01 | P = .54 | A = -.25 | B = -.58 | P = .26 | |
| NET RADIATION | | -7.26 | MW/CM2 | | -7.26 | MW/CM2 | | -7.26 | MW/CM2 | |
| RICHARDSON NO. | (4M)***** | (8M)***** | (16M)***** | (4M) .18 | (8M) .29 | (16M) .33 | (4M) .08 | (8M) .19 | (16M) .42 | |
| | (39.192M)29.79 | (OBSERVED DATA) | (39.192M) -.00 | (OBSERVED DATA) | (39.192M) .61 | (OBSERVED DATA) | (39.192M) .61 | (OBSERVED DATA) | (39.192M) .61 | |
| (1/L)*10 | (4M)***** | (8M)***** | (16M)***** | (4M) 1.72 | (8M) 1.94 | (16M) 1.21 | (4M) .40 | (8M) .92 | (16M) 1.95 | |
| USTAR | (4M).0000 | (8M).0000 | (16M).0000 | (4M).0582 | (8M).0637 | (16M).0814 | (4M).1297 | (8M).1105 | (16M).0875 | |
| HEIGHT (M) | WD | WS | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD | WS | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
| 1. | | | -3.47 | | | | | | | |
| 2. | 241. | .50 | -3.17 | 57.1 | | 299. | .80 | -4.15 | 9.3 | |
| 4. | 266. | .41 | -3.04 | 41.9 | | 293. | 1.24 | -3.94 | 7.1 | |
| 8. | 303. | .30 | -2.44 | 18.8 | .5 | 290. | 1.82 | -3.03 | 4.1 | 2.0 |
| 16. | 283. | .45 | -2.41 | 37.6 | .2 | 301. | 2.72 | -2.48 | 2.9 | 1.5 |
| 32. | 319. | .43 | -2.35 | 13.5 | .3 | 300. | 3.45 | -2.36 | 2.9 | 2.1 |
| 48. | | | -2.43 | | | | | -2.53 | | |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (M/S) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (M/S) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------|----------|------------|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|
| 1.0 | .44 | -3.24 | 72.7 | .7 | .58 | -4.06 | 12.4 | 1.8 | 1.51 | -3.42 | 8.7 | 13.0 | | |
| 2.0 | .43 | -3.17 | 53.9 | .6 | .84 | -3.94 | 9.0 | 1.8 | 1.80 | -3.39 | 7.3 | 8.7 | | |
| 4.0 | .42 | -3.03 | 39.9 | .5 | 1.22 | -3.70 | 6.5 | 1.8 | 2.16 | -3.34 | 6.2 | 5.8 | | |
| 8.0 | .41 | -2.79 | 29.6 | .4 | 1.76 | -3.28 | 4.7 | 1.8 | 2.58 | -3.24 | 5.2 | 3.8 | | |
| 16.0 | .40 | -2.42 | 21.9 | .3 | 2.55 | -2.63 | 3.4 | 1.8 | 3.08 | -3.08 | 4.4 | 2.6 | | |
| 32.0 | .40 | -2.15 | 16.2 | .3 | 3.70 | -2.11 | 2.5 | 1.8 | 3.69 | -2.88 | 3.7 | 1.7 | | |
| 48.0 | .39 | -2.51 | 13.6 | .2 | 4.59 | -2.62 | 2.0 | 1.9 | 4.10 | -2.84 | 3.3 | 1.3 | | |
| | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | | |
| 4.0 | -.0029 | .0737 | 24.136 | .00 | .1537 | .1193 | 4.700 | .00 | .1294 | .0346 | .433 | .00 | | |
| 8.0 | -.0014 | .0613 | 83.742 | .00 | .1114 | .0992 | 7.431 | .00 | .0774 | .0314 | 1.098 | .00 | | |
| 16.0 | -.0007 | .0367 | 208.628 | .00 | .0807 | .0589 | 8.383 | .00 | .0463 | .0250 | 2.444 | .00 | | |
| 39.2* | -.0025 | .0050 | 163.522 | .00 | .0715 | -.0006 | -.221 | -.12 | .0286 | .0138 | 5.177 | .00 | | |

* OBSERVED DATA

[illegible]

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1.0 | .88 | -3.54 | 8.3 | 17.8 | 1.00 | -4.08 | 12.4 | 1.2 | 1.53 | -5.45 | 8.0 | 10.8 |
| 2.0 | 1.15 | -3.52 | 7.2 | 10.2 | 1.15 | -4.04 | 12.4 | 1.4 | 2.04 | -5.37 | 5.9 | 7.2 |
| 4.0 | 1.50 | -3.47 | 6.3 | 5.8 | 1.33 | -3.98 | 12.3 | 1.8 | 2.70 | -5.22 | 4.4 | 4.8 |
| 8.0 | 1.97 | -3.36 | 5.5 | 3.3 | 1.53 | -3.86 | 12.3 | 2.2 | 3.58 | -4.94 | 3.3 | 3.2 |
| 16.0 | 2.57 | -3.16 | 4.8 | 1.9 | 1.75 | -3.70 | 12.2 | 2.7 | 4.75 | -4.47 | 2.4 | 2.1 |
| 32.0 | 3.37 | -2.77 | 4.2 | 1.1 | 2.02 | -3.70 | 12.2 | 3.3 | 6.30 | -3.92 | 1.8 | 1.4 |
| 48.0 | 3.94 | -2.39 | 3.9 | .8 | 2.19 | -4.09 | 12.1 | 3.7 | 7.44 | -3.88 | 1.5 | 1.1 |
| | DJ/DZ | DTH/DZ | BU*100 | RI | DJ/DZ | DTH/DZ | BU*100 | RI | DJ/DZ | DTH/DZ | BU*100 | RI |
| 4.0 | .1362 | .0356 | .917 | .00 | .0619 | .0405 | 1.337 | .00 | .2578 | .0820 | .658 | .00 |
| 8.0 | .0891 | .0353 | 2.125 | .00 | .0356 | .0326 | 3.257 | .00 | .1710 | .0721 | 1.313 | .00 |
| 16.0 | .0583 | .0348 | 4.881 | .00 | .0204 | .0168 | 5.093 | .00 | .1134 | .0523 | 2.161 | .00 |
| 39.2* | .0236 | .0294 | 11.746 | .00 | .0143 | -.0031 | -4.106 | -39.62 | .0549 | .0200 | 2.312 | .00 |

A-148

OBSERVED DATA

| | | DATE 30/03/77 | | TIME 10:00:00 | | DATE 30/03/77 | | TIME 11:00:00 | | DATE 30/03/77 | | TIME 12:00:00 | |
|----------------|------------------|------------------|-------------|-----------------|------------------|-----------------|------------------|---------------------------------|-----------|-----------------------------|------------------|-----------------------------|-------|
| | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | |
| | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | |
| | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | |
| | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | |
| CLD (TENTHS) | :LOW | 1 MID | HI | TOTL | 1:LOW | 4 MID | HI | TOTL | 4:LOW | 4 MID | HI | TOTL | 4: |
| CLD HT (M) | :LOW | 1525 MID | HI | | :LOW | 1525 MID | HI | | :LOW | 1525 MID | HI | | |
| EXPONENTS | :A= | -.04 B= | .04 P= | .10 | :A= | -.13 B= | .07 P= | .07 | :A= | -.27 B= | .24 P= | .05 | |
| NET RADIATION | :39.91 MW/CM2 | | | | | | | | | | | | |
| RICHARDSON NO. | : (4M) | -.97 (8M) | -2.92 (16M) | -6.73 | : (4M) | -2.22 (8M) | -6.70 (16M) | -14.6 | : (4M) | -2.92 (8M) | -9.10 (16M) | -20.7 | |
| (1/L)*10 | : (39.192M)***** | (OBSERVED DATA): | (39.192M) | -2.92 | (OBSERVED DATA): | (39.192M) | -2.92 | (OBSERVED DATA): | (39.192M) | -3.96 | (OBSERVED DATA): | (39.192M) | -3.96 |
| USTAR | : (4M) | -2.60 (8M) | -3.84 (16M) | -4.42 | : (4M) | -5.86 (8M) | -8.79 (16M)***** | (4M)-7.69 (8M)-11.94 (16M)***** | : (4M) | -7.69 (8M)-11.94 (16M)***** | : (4M) | -7.69 (8M)-11.94 (16M)***** | |
| | : (4M) | .1604 (8M) | .1675 (16M) | .1719 | : (4M) | .1964 (8M) | .2071 (16M) | .2248 | : (4M) | .2667 (8M) | .2825 (16M) | .2816 | |
| | | | | | | | | | | | | | |
| HEIGHT (M) | :WD | WS | TEMP | SIGA | SIGE | :WD | WS | TEMP | SIGA | SIGE | :WD | WS | TEMP |
| | : (DEG) | (M/S) | (C) | (DEG) | (DEG) | : (DEG) | (M/S) | (C) | (DEG) | (DEG) | : (DEG) | (M/S) | (C) |
| 1. | : 33. | 1.57 | 1.46 | 1.26 | 24.2 | : 358. | 1.72 | 2.47 | 51.2 | : 351. | 2.20 | 3.53 | 60.5 |
| 2. | : 30. | 1.53 | 1.02 | 24.3 | | : 353. | 1.64 | 1.93 | 46.2 | : 352. | 2.12 | 2.78 | 57.7 |
| 4. | : 25. | 1.75 | .91 | 19.3 | 19.0 | : 350. | 1.81 | 1.89 | 39.3 | : 352. | 2.36 | 2.78 | 53.8 |
| 8. | : 35. | 1.83 | .67 | 18.9 | 22.3 | : 355. | 1.91 | 1.59 | 39.7 | : 24. | 2.38 | 2.55 | 32.5 |
| 16. | : 29. | 2.00 | .36 | 18.7 | 20.0 | : 4. | 1.97 | 1.36 | 34.6 | : 6. | 2.44 | 2.17 | 33.4 |
| 32. | : 28. | 2.05 | .09 | 25.0 | 21.2 | : 13. | 2.11 | 1.10 | 33.7 | : 17. | 2.56 | 1.91 | 26.7 |
| 48. | | | | | | | | | | | | | |

LEAST SQUARES FITTED DATA

| | | DATE 30/03/77 | | TIME 10:00:00 | | DATE 30/03/77 | | TIME 11:00:00 | | DATE 30/03/77 | | TIME 12:00:00 | |
|----------------|------------------|------------------|-------------|-----------------|------------------|-----------------|------------------|---------------------------------|-----------|-----------------------------|------------------|-----------------------------|-------|
| | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | |
| | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | |
| | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | |
| | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | |
| CLD (TENTHS) | :LOW | 1 MID | HI | TOTL | 1:LOW | 4 MID | HI | TOTL | 4:LOW | 4 MID | HI | TOTL | 4: |
| CLD HT (M) | :LOW | 1525 MID | HI | | :LOW | 1525 MID | HI | | :LOW | 1525 MID | HI | | |
| EXPONENTS | :A= | -.04 B= | .04 P= | .10 | :A= | -.13 B= | .07 P= | .07 | :A= | -.27 B= | .24 P= | .05 | |
| NET RADIATION | :39.91 MW/CM2 | | | | | | | | | | | | |
| RICHARDSON NO. | : (4M) | -.97 (8M) | -2.92 (16M) | -6.73 | : (4M) | -2.22 (8M) | -6.70 (16M) | -14.6 | : (4M) | -2.92 (8M) | -9.10 (16M) | -20.7 | |
| (1/L)*10 | : (39.192M)***** | (OBSERVED DATA): | (39.192M) | -2.92 | (OBSERVED DATA): | (39.192M) | -2.92 | (OBSERVED DATA): | (39.192M) | -3.96 | (OBSERVED DATA): | (39.192M) | -3.96 |
| USTAR | : (4M) | -2.60 (8M) | -3.84 (16M) | -4.42 | : (4M) | -5.86 (8M) | -8.79 (16M)***** | (4M)-7.69 (8M)-11.94 (16M)***** | : (4M) | -7.69 (8M)-11.94 (16M)***** | : (4M) | -7.69 (8M)-11.94 (16M)***** | |
| | : (4M) | .1604 (8M) | .1675 (16M) | .1719 | : (4M) | .1964 (8M) | .2071 (16M) | .2248 | : (4M) | .2667 (8M) | .2825 (16M) | .2816 | |
| | | | | | | | | | | | | | |
| HEIGHT (M) | :WD | WS | TEMP | SIGA | SIGE | :WD | WS | TEMP | SIGA | SIGE | :WD | WS | TEMP |
| | : (DEG) | (M/S) | (C) | (DEG) | (DEG) | : (DEG) | (M/S) | (C) | (DEG) | (DEG) | : (DEG) | (M/S) | (C) |
| 1. | : 33. | 1.57 | 1.46 | 1.26 | 24.2 | : 358. | 1.72 | 2.47 | 51.2 | : 351. | 2.20 | 3.53 | 60.5 |
| 2. | : 30. | 1.53 | 1.02 | 24.3 | | : 353. | 1.64 | 1.93 | 46.2 | : 352. | 2.12 | 2.78 | 57.7 |
| 4. | : 25. | 1.75 | .91 | 19.3 | 19.0 | : 350. | 1.81 | 1.89 | 39.3 | : 352. | 2.36 | 2.78 | 53.8 |
| 8. | : 35. | 1.83 | .67 | 18.9 | 22.3 | : 355. | 1.91 | 1.59 | 39.7 | : 24. | 2.38 | 2.55 | 32.5 |
| 16. | : 29. | 2.00 | .36 | 18.7 | 20.0 | : 4. | 1.97 | 1.36 | 34.6 | : 6. | 2.44 | 2.17 | 33.4 |
| 32. | : 28. | 2.05 | .09 | 25.0 | 21.2 | : 13. | 2.11 | 1.10 | 33.7 | : 17. | 2.56 | 1.91 | 26.7 |
| 48. | | | | | | | | | | | | | |

* OBSERVED DATA

OBSERVED DATA

[illegible]

LEAST SQUARES FITTED DATA

| HEIGHT (M) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : |
|--------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|-----------------|
| 1.0 : | 2.12 : | 4.51 : | 58.9 : | 11.4 : | 2.10 : | 5.21 : | 52.1 : | 10.4 : | 4.62 : | 6.47 : | 11.3 : | 4.9 : |
| 2.0 : | 2.19 : | 4.43 : | 54.3 : | 13.3 : | 2.25 : | 5.16 : | 49.3 : | 11.9 : | 4.92 : | 6.38 : | 10.7 : | 5.5 : |
| 4.0 : | 2.26 : | 4.28 : | 50.0 : | 15.5 : | 2.42 : | 5.05 : | 46.7 : | 13.8 : | 5.24 : | 6.18 : | 10.0 : | 6.1 : |
| 8.0 : | 2.33 : | 4.00 : | 46.1 : | 18.1 : | 2.59 : | 4.86 : | 44.3 : | 15.9 : | 5.58 : | 5.83 : | 9.5 : | 6.9 : |
| 16.0 : | 2.40 : | 3.55 : | 42.5 : | 21.1 : | 2.77 : | 4.55 : | 41.9 : | 18.3 : | 5.94 : | 5.27 : | 8.9 : | 7.7 : |
| 32.0 : | 2.47 : | 3.05 : | 39.2 : | 24.6 : | 2.97 : | 4.20 : | 39.7 : | 21.2 : | 6.33 : | 4.64 : | 8.4 : | 8.6 : |
| 48.0 : | 2.52 : | 3.10 : | 37.4 : | 26.9 : | 3.09 : | 4.20 : | 38.5 : | 23.0 : | 6.56 : | 4.71 : | 8.1 : | 9.2 : |
| | DU/DZ : | DTH/DZ : | BU*100 : | RI : | DU/DZ : | DTH/DZ : | BU*100 : | RI : | DU/DZ : | DTH/DZ : | BU*100 : | RI : |
| 4.0 : | .0230 : | -.0617 : | -.685 : | -.08 : | .0557 : | -.0389 : | -.376 : | -.11 : | .1096 : | -.0801 : | -.164 : | -.05 : |
| 8.0 : | .0118 : | -.0510 : | -2.132 : | -.26 : | .0298 : | -.0319 : | -1.074 : | -.63 : | .0583 : | -.0666 : | -.481 : | -.14 : |
| 16.0 : | .0061 : | -.0296 : | -4.662 : | -3.14 : | .0160 : | -.0178 : | -2.088 : | -3.10 : | .0310 : | -.0396 : | -1.011 : | -.99 : |
| 39.2* | .0000 : | -.0050 : | -4.651 : | .00 : | -.0069 : | -.0000 : | -.000 : | -.00 : | -.0006 : | -.0094 : | -1.269 : | -.76 : |

| * OBSERVED DATA | ** OBSERVED DATA 2-16M |
|-----------------|------------------------|
| 1 | 1 |
| 2 | 2 |
| 3 | 3 |
| 4 | 4 |
| 5 | 5 |
| 6 | 6 |
| 7 | 7 |
| 8 | 8 |
| 9 | 9 |
| 10 | 10 |
| 11 | 11 |
| 12 | 12 |
| 13 | 13 |
| 14 | 14 |
| 15 | 15 |
| 16 | 16 |
| 17 | 17 |
| 18 | 18 |
| 19 | 19 |
| 20 | 20 |
| 21 | 21 |
| 22 | 22 |
| 23 | 23 |
| 24 | 24 |
| 25 | 25 |
| 26 | 26 |
| 27 | 27 |
| 28 | 28 |
| 29 | 29 |
| 30 | 30 |
| 31 | 31 |
| 32 | 32 |
| 33 | 33 |
| 34 | 34 |
| 35 | 35 |
| 36 | 36 |
| 37 | 37 |
| 38 | 38 |
| 39 | 39 |
| 40 | 40 |
| 41 | 41 |
| 42 | 42 |
| 43 | 43 |
| 44 | 44 |
| 45 | 45 |
| 46 | 46 |
| 47 | 47 |
| 48 | 48 |
| 49 | 49 |
| 50 | 50 |
| 51 | 51 |
| 52 | 52 |
| 53 | 53 |
| 54 | 54 |
| 55 | 55 |
| 56 | 56 |
| 57 | 57 |
| 58 | 58 |
| 59 | 59 |
| 60 | 60 |
| 61 | 61 |
| 62 | 62 |
| 63 | 63 |
| 64 | 64 |
| 65 | 65 |
| 66 | 66 |
| 67 | 67 |
| 68 | 68 |
| 69 | 69 |
| 70 | 70 |
| 71 | 71 |
| 72 | 72 |
| 73 | 73 |
| 74 | 74 |
| 75 | 75 |
| 76 | 76 |
| 77 | 77 |
| 78 | 78 |
| 79 | 79 |
| 80 | 80 |
| 81 | 81 |
| 82 | 82 |
| 83 | 83 |
| 84 | 84 |
| 85 | 85 |
| 86 | 86 |
| 87 | 87 |
| 88 | 88 |
| 89 | 89 |
| 90 | 90 |
| 91 | 91 |
| 92 | 92 |
| 93 | 93 |
| 94 | 94 |
| 95 | 95 |
| 96 | 96 |
| 97 | 97 |
| 98 | 98 |
| 99 | 99 |
| 100 | 100 |

OBSERVED DATA

```

: DATE 30/03/77 TIME 22:00:00 : DATE 30/03/77 TIME 23:00:00 : DATE 31/03/77 TIME 00:00:00 :
: WEATHER : WEATHER : WEATHER :
: TEMP DEG C 3.9 : TEMP DEG C 3.6 : TEMP DEG C 2.5 :
: DEW POINT DEG C -8.9 : DEW POINT DEG C -8.6 : DEW POINT DEG C -8.6 :
: VISIBILITY (MI) 25 : VISIBILITY (MI) 25 : VISIBILITY (MI) 25 :
: CLD (TENTHS) :LOW HI 8 TOTL 8:LOW HI 8 TOTL 8:LOW HI 9 TOTL 9:
: CLD HT (M) :LOW MID HI 7620 :LOW MID HI 7620 :LOW MID HI 7620 :
: EXPONENTS : A= -.05 B= .54 P= .12 : A= .02 B= .61 P= .05 : A= -.08 B= .10 P= .26 :
: NET RADIATION : -4.33 MW/CM2 : -5.79 MW/CM2 : -3.63 MW/CM2 :
: RICHARDSON NO.: (4M) .53 (8M) 1.50(16M) 3.06 : (4M) .39*(8M)1.44*(16M)73.73 : (4M) .27 (8M) .72(16M) 1.75 :
: (1/L)*10 : (39.192M) -.12 (OBSERVED DATA): (39.192M) .80 (OBSERVED DATA): (39.192M) 9.46 (OBSERVED DATA):
: USTAR : (4M)11.81 (8M)43.95 (16M)89.58: (4M) 6.65*(8M) 40.8*(16M)*****: (4M) 3.50 (8M)10.57 (16M)29.89:
: (4M).0451 (8M).0221 (16M).0129: (4M).065* (8M).032* (16M).0007: (4M).0649 (8M).0419 (16M).0252:

```

```

: WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE :
: HEIGHT (M) : (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) :
: 1. : 3.01 : -.57 : 1.79 : 229. : 229. : 229. : 1.37 : 272. : 272. : 1.37 : 272. : 272. : 1.37 : 272. : 272. :
: 2. : 19. : 1.54 : 3.17 : 46.1 : 46.1 : 46.1 : 1.37 : 272. : 272. : 1.37 : 272. : 272. : 1.37 : 272. : 272. :
: 4. : 15. : 1.54 : 2.80 : 44.9 : 44.9 : 44.9 : 1.37 : 272. : 272. : 1.37 : 272. : 272. : 1.37 : 272. : 272. :
: 8. : 7. : 1.81 : 3.25 : 41.0 : 41.0 : 41.0 : 1.37 : 272. : 272. : 1.37 : 272. : 272. : 1.37 : 272. : 272. :
: 16. : 18. : 1.91 : 3.29 : 43.3 : 43.3 : 43.3 : 1.37 : 272. : 272. : 1.37 : 272. : 272. : 1.37 : 272. : 272. :
: 32. : 70. : 2.01 : 3.20 : 37.0 : 37.0 : 37.0 : 1.37 : 272. : 272. : 1.37 : 272. : 272. : 1.37 : 272. : 272. :
: 48. : 38. : 2.23 : 3.03 : 41.8 : 41.8 : 41.8 : 1.37 : 272. : 272. : 1.37 : 272. : 272. : 1.37 : 272. : 272. :

```

LEAST SQUARES FITTED DATA

```

: WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE :
: HEIGHT (M) : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) :
: 1.0 : 1.38 : 3.01 : 47.2 : 3.7 : 3.7 : 1.93 : -.54 : 13.6 : .7 : 1.12 : -.38 : 8.0 : 2.2 :
: 2.0 : 1.50 : 3.03 : 45.7 : 5.4 : 5.4 : 2.00 : -.39 : 13.8 : 1.1 : 1.34 : -.45 : 7.5 : 2.3 :
: 4.0 : 1.62 : 3.07 : 44.3 : 7.8 : 7.8 : 2.06 : -.11 : 13.9 : 1.8 : 1.61 : .58 : 7.2 : 2.5 :
: 8.0 : 1.76 : 3.14 : 42.8 : 11.4 : 11.4 : 2.14 : .40 : 14.1 : 2.7 : 1.93 : .83 : 6.8 : 2.7 :
: 16.0 : 1.91 : 3.24 : 41.5 : 16.5 : 16.5 : 2.21 : 1.22 : 14.2 : 4.1 : 2.32 : 1.29 : 6.4 : 2.9 :
: 32.0 : 2.07 : 3.25 : 40.1 : 24.1 : 24.1 : 2.28 : 2.06 : 14.4 : 6.3 : 2.78 : 2.05 : 6.1 : 3.1 :
: 48.0 : 2.17 : 3.01 : 39.4 : 30.0 : 30.0 : 2.33 : 1.85 : 14.5 : 8.1 : 3.09 : 2.60 : 5.9 : 3.2 :
: DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI :
: 4.0 : .0441 : .0290 : .626 : .00 : .0232 : .1416 : 1.907 : .00 : .0981 : .0736 : 1.625 : .00 :
: 8.0 : .0239 : .0242 : 1.772 : .00 : .0120 : .1209 : 6.078 : .00 : .0588 : .0694 : 4.257 : .00 :
: 16.0 : .0130 : .0145 : 3.617 : .00 : .0062 : .0795 : 14.896 : .00 : .0352 : .0610 : 10.384 : .00 :
: 39.2* : .0137 : -.0006 : -.766 : -1.60 : -.0175 : .0069 : 8.338 : .00 : -.0119 : .0375 : 26.424 : .00 :

```

* OBSERVED DATA

OBSERVED DATA

| | | | | | | | | | | | | | | | | | | | | |
|----------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|-----------|-------|-------|-------|-----------------|-------|-----------|-------|-------|-------|-----------------|-------|-------|-------|
| | DATE 31/03/77 | TIME 01:00:00 | DATE 31/03/77 | TIME 02:00:00 | DATE 31/03/77 | TIME 03:00:00 | | | | | | | | | | | | | | |
| | WEATHER | | WEATHER | | WEATHER | | | | | | | | | | | | | | | |
| | TEMP DEG C | 3.4 | TEMP DEG C | 3.4 | TEMP DEG C | 0.0 | | | | | | | | | | | | | | |
| | DEW POINT DEG C | -8.3 | DEW POINT DEG C | -7.8 | DEW POINT DEG C | -8.3 | | | | | | | | | | | | | | |
| | VISIBILITY (MI) | 20 | VISIBILITY (MI) | 20 | VISIBILITY (MI) | 20 | | | | | | | | | | | | | | |
| CLD (TENTHS) | LOW | HI | 8 TOTL | 8:LOW | HI | 6 TOTL | 6:LOW | | | | | | | | | | | | | |
| CLD HT (M) | LOW | MID | HI | 6705 | MID | HI | 6705 | | | | | | | | | | | | | |
| EXPONENTS | A = | .12 | B = | .60 | P = | .12 | A = | -.05 | B = | .76 | P = | -.12 | | | | | | | | |
| NET RADIATION | | -5.44 | MW/CM2 | | -MSG- | MW/CM2 | | | | -MSG- | MW/CM2 | | | | | | | | | |
| RICHARDSON NO. | (4M) | 1.23 | (8M) | 3.46 | (16M) | 7.09 | (4M) | 13.97 | (8M) | 53.53 | (16M) | ***** | (4M) | 2.06 | (8M) | 5.14 | (16M) | 8.76 | | |
| | (39.192M) | | | -.27 | (OBSERVED DATA) | | (39.192M) | | | -.80 | (OBSERVED DATA) | | (39.192M) | | | .39 | (OBSERVED DATA) | | | |
| (1/L)*10 | (4M) | 59.72 | (8M) | ***** | (16M) | ***** | (4M) | ***** | (8M) | ***** | (16M) | ***** | (4M) | ***** | (8M) | ***** | (16M) | ***** | | |
| USTAR | (4M) | .0291 | (8M) | .0128 | (16M) | .0071 | (4M) | .0000 | (8M) | .0000 | (16M) | .0000 | (4M) | .0098 | (8M) | .0048 | (16M) | .0033 | | |
| HEIGHT (M) | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE |
| | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) |
| 1. | | | .07 | | | | | | | | | | | | | | | | | |
| 2. | 67. | 1.78 | .33 | 12.5 | | | 344. | .76 | -1.90 | 23.6 | | 310. | .83 | -1.12 | | | | | | |
| 4. | 62. | 1.88 | .44 | 11.4 | | | 319. | 1.13 | -.04 | 14.9 | | 299. | .98 | -.32 | 16.5 | | | | | |
| 8. | 61. | 2.18 | 1.19 | 12.0 | 1.8 | 310. | | .93 | .78 | 18.7 | 1.2 | 291. | 1.29 | .53 | 16.2 | 3.9 | | | | |
| 16. | 79. | 2.20 | 1.51 | 17.6 | 3.7 | 300. | | .61 | 1.00 | 23.2 | 4.1 | 286. | 1.29 | .67 | 13.6 | 5.7 | | | | |
| 32. | 92. | 2.34 | 1.64 | 18.2 | 4.8 | 237. | | .52 | 1.09 | 15.4 | 4.6 | 272. | 1.41 | .65 | 11.8 | 7.7 | | | | |
| 48. | 102. | 2.75 | 1.56 | 14.4 | 5.3 | 202. | | .80 | 1.04 | 17.4 | 5.2 | 260. | 1.62 | .52 | 13.6 | 9.0 | | | | |

LEAST SQUARES FITTED DATA

| | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE |
|------------|-------|-------|--------|-------|-------|--------|-------|---------|-------|-------|-------|-------|--------|-------|-------|-------|-----|-------|-------|-------|
| HEIGHT (M) | (M/S) | (C) | (DEG) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (DEG) |
| 1.0 | 1.62 | .23 | 10.7 | .6 | | 1.01 | -1.63 | 21.0 | .3 | | .76 | -.75 | 22.5 | 1.5 | | | | | | |
| 2.0 | 1.76 | .33 | 11.6 | .9 | | .93 | -1.40 | 20.3 | .6 | | .87 | -.63 | 20.1 | 2.0 | | | | | | |
| 4.0 | 1.92 | .53 | 12.6 | 1.3 | | .86 | -.97 | 19.6 | .9 | | 1.00 | -.40 | 18.0 | 2.8 | | | | | | |
| 8.0 | 2.09 | .88 | 13.6 | 2.0 | | .79 | -.19 | 18.8 | 1.6 | | 1.14 | .00 | 16.1 | 3.9 | | | | | | |
| 16.0 | 2.27 | 1.42 | 14.7 | 3.1 | | .73 | .99 | 18.2 | 2.7 | | 1.30 | .61 | 14.4 | 5.5 | | | | | | |
| 32.0 | 2.47 | 1.87 | 16.0 | 4.6 | | .67 | 1.85 | 17.5 | 4.5 | | 1.49 | 1.02 | 12.9 | 7.6 | | | | | | |
| 48.0 | 2.60 | 1.47 | 16.7 | 5.9 | | .64 | .74 | 17.1 | 6.1 | | 1.61 | .38 | 12.0 | 9.2 | | | | | | |
| | DU/DZ | DT/DZ | BU*100 | RI | | DU/DZ | DT/DZ | BU*100 | RI | | DU/DZ | DT/DZ | BU*100 | RI | | | | | | |
| 4.0 | .0543 | .1013 | 1.578 | .00 | | -.0233 | .2113 | 16.423 | .00 | | .0448 | .1149 | 6.667 | .00 | | | | | | |
| 8.0 | .0296 | .0847 | 4.446 | .00 | | -.0108 | .1726 | 62.939 | .00 | | .0256 | .0942 | 16.666 | .00 | | | | | | |
| 16.0 | .0161 | .0514 | 9.096 | .00 | | -.0050 | .0951 | 162.538 | .00 | | .0147 | .0526 | 28.391 | .00 | | | | | | |
| 39.2* | .0256 | .0050 | 4.299 | .00 | | .0175 | .0069 | 90.464 | .00 | | .0131 | .0019 | 4.555 | .00 | | | | | | |

* OBSERVED DATA

| | : DATE | 31/03/77 | TIME | 04:00:00 | : | DATE | 31/03/77 | TIME | 05:00:00 | : | DATE | 31/03/77 | TIME | 06:00:00 | : |
|-------------------|--------|-----------|------------------------|-------------|------------------------|-----------|------------------------|--------------|------------------------|-----------|------------------------|-----------------|------------------------|-----------|------------------------|
| | : | | WEATHER | : | : | | WEATHER | : | : | : | | WEATHER | : | : | : |
| | : | | TEMP DEG C | -1.1 | : | | TEMP DEG C | -2.2 | : | : | | TEMP DEG C | -2.8 | : | : |
| | : | | DEW POINT DEG C | -8.9 | : | | DEW POINT DEG C | -8.9 | : | : | | DEW POINT DEG C | -9.5 | : | : |
| | : | | VISIBILITY (MI) | 20 | : | | VISIBILITY (MI) | 20 | : | : | | VISIBILITY (MI) | 25 | : | : |
| CLD (TENTHS) | : | LOW | MID | 7 HI | TOTAL | : | 7:LOW | MID | 7 HI | TOTAL | : | 7:LOW | 4 MID | HI | TOTAL |
| CLD HT (M) | : | LOW | MID | 4570 HI | : | : | LOW | MID | 4570 HI | : | : | LOW | 1525 MID | HI | : |
| EXPONENTS | : | A = | - .27 B = | - .25 P = | .25 | : | A = | - .25 B = | - .21 P = | .31 | : | A = | - .29 B = | .00 P = | .26 |
| NET RADIATION : | : | | -6.14 MW/CM2 | : | : | | | -7.26 MW/CM2 | : | : | | | -7.95 MW/CM2 | : | : |
| RICHARDSON NO.: : | (4M) | .13 (8M) | .30(16M) | .55 : | (4M) | .05 (8M) | .12(16M) | .27 : | (4M) | .12 (8M) | .29(16M) | .49 : | (4M) | .12 (8M) | .29(16M) |
| | : | (39.192M) | 1.30 (OBSERVED DATA) : | (39.192M) | 1.34 (OBSERVED DATA) : | (39.192M) | 7.16 (OBSERVED DATA) : | (39.192M) | 7.16 (OBSERVED DATA) : | (39.192M) | 7.16 (OBSERVED DATA) : | (39.192M) | 7.16 (OBSERVED DATA) : | (39.192M) | 7.16 (OBSERVED DATA) : |
| (1/L)*10 | : | (4M) | .90 (8M) | 2.06 (16M) | 3.18 : | (4M) | .23 (8M) | .45 (16M) | .84 : | (4M) | .88 (8M) | 1.89 (16M) | 2.52 : | (4M) | .88 (8M) |
| USTAR | : | (4M). | 1936 (8M) | 1546 (16M). | 1271: | (4M). | 2016 (8M). | 1887 (16M). | 1655: | (4M). | 1845 (8M). | 1476 (16M). | 1280: | (4M). | 1845 (8M). |

| HEIGHT (M) | WD :(DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|--------------|-------------|-------------|---------------|---------------|-------------|-------------|-------------|---------------|---------------|-------------|-------------|-------------|---------------|---------------|
| 1. | : | | -2.71 | | | : | | -1.56 | | | : | | -1.70 | | : |
| 2. | : 192. | 2.99 | -2.43 | 7.9 | | : 241. | 2.59 | -1.45 | 12.6 | | : 264. | 2.83 | -1.41 | 10.2 | : |
| 4. | : 189. | 3.38 | -2.39 | 7.5 | | : 238. | 2.84 | -1.63 | 11.7 | | : 263. | 3.07 | -1.37 | 8.7 | : |
| 8. | : 187. | 4.65 | -1.52 | 5.7 | 2.5: | 231. | 4.01 | -99 | 8.7 | 3.2: | 257. | 4.39 | -37 | 7.4 | 3.4: |
| 16. | : 193. | 5.78 | -5.5 | 4.4 | 1.4: | 231. | 4.83 | -59 | 6.9 | 2.3: | 257. | 5.41 | .42 | 5.9 | 2.3: |
| 32. | : 194. | 6.35 | .15 | 3.1 | 1.3: | 225. | 6.00 | -19 | 6.0 | 2.4: | 253. | 5.93 | .68 | 4.7 | 2.9: |
| 48. | : 195. | 6.14 | .09 | 4.3 | 1.7: | 227. | 6.54 | .33 | 6.5 | 2.1: | 252. | 6.01 | .60 | 4.1 | 3.2: |

| HEIGHT (M) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : |
|--------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|-----------------|
| 1.0 : | 2.56 : | -2.68 : | 9.8 : | 3.5 : | 2.01 : | -1.58 : | 15.1 : | 4.6 : | 2.36 : | -1.60 : | 13.0 : | 2.9 : |
| 2.0 : | 3.05 : | -2.52 : | 8.1 : | 3.0 : | 2.50 : | -1.51 : | 12.7 : | 4.0 : | 2.83 : | -1.45 : | 10.6 : | 2.9 : |
| 4.0 : | 3.64 : | -2.20 : | 6.8 : | 2.5 : | 3.10 : | -1.38 : | 10.7 : | 3.5 : | 3.39 : | -1.16 : | 8.7 : | 2.9 : |
| 8.0 : | 4.34 : | -1.62 : | 5.6 : | 2.1 : | 3.84 : | -1.14 : | 9.0 : | 3.0 : | 4.08 : | -.62 : | 7.1 : | 2.9 : |
| 16.0 : | 5.18 : | -.68 : | 4.7 : | 1.8 : | 4.76 : | -.70 : | 7.6 : | 2.6 : | 4.89 : | .21 : | 5.8 : | 2.9 : |
| 32.0 : | 6.18 : | .29 : | 3.9 : | 1.5 : | 5.90 : | -.06 : | 6.4 : | 2.3 : | 5.88 : | .97 : | 4.7 : | 2.9 : |
| 48.0 : | 6.85 : | .05 : | 3.5 : | 1.4 : | 6.70 : | .29 : | 5.8 : | 2.1 : | 6.54 : | .50 : | 4.2 : | 2.9 : |
| ----- | | | | | | | | | | | | |
| : | DU/DZ : | OTH/DZ : | BU*100 : | RI : | DU/DZ : | OTH/DZ : | BU*100 : | RI : | DU/DZ : | OTH/DZ : | BU*100 : | RI : |
| 4.0 : | .2149 : | .1600 : | .698 : | .00 : | .2237 : | .0724 : | .435 : | .00 : | .2080 : | .1480 : | .740 : | .00 : |
| 8.0 : | .1281 : | .1364 : | 1.670 : | .00 : | .1387 : | .0665 : | 1.040 : | .00 : | .1249 : | .1241 : | 1.719 : | .00 : |
| 16.0 : | .0764 : | .0893 : | 3.063 : | .00 : | .0860 : | .0549 : | 2.229 : | .00 : | .0750 : | .0763 : | 2.924 : | .00 : |
| 39.2* : | -.0131 : | .0063 : | .880 : | .00 : | .0337 : | .0425 : | 6.008 : | .00 : | .0050 : | .0050 : | .772 : | .00 : |

A-155

OBSERVED DATA

| DATE 31/03/77 TIME 07:00:00 : DATE 31/03/77 TIME 08:00:00 : DATE 31/03/77 TIME 09:00:00 : | | | | | | | | | |
|---|-----------------|-----------------|-----------------|----------------|-----------------|-----------------|-----------------|----------------|-----------------|
| WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | |
| CLD (TENTHS) | TEMP DEG C | DEW POINT DEG C | VISIBILITY (MI) | CLD (TENTHS) | TEMP DEG C | DEW POINT DEG C | VISIBILITY (MI) | CLD (TENTHS) | TEMP DEG C |
| CLD HT (M) | DEW POINT DEG C | VISIBILITY (MI) | CLD (TENTHS) | CLD HT (M) | DEW POINT DEG C | VISIBILITY (MI) | CLD (TENTHS) | CLD HT (M) | DEW POINT DEG C |
| EXPCNENTS | TEMP DEG C | VISIBILITY (MI) | CLD (TENTHS) | EXPCNENTS | TEMP DEG C | VISIBILITY (MI) | CLD (TENTHS) | EXPCNENTS | TEMP DEG C |
| NET RADIATION | TEMP DEG C | VISIBILITY (MI) | CLD (TENTHS) | NET RADIATION | TEMP DEG C | VISIBILITY (MI) | CLD (TENTHS) | NET RADIATION | TEMP DEG C |
| RICHARDSON NJ. | TEMP DEG C | VISIBILITY (MI) | CLD (TENTHS) | RICHARDSON NJ. | TEMP DEG C | VISIBILITY (MI) | CLD (TENTHS) | RICHARDSON NJ. | TEMP DEG C |
| (1/L)*10 | TEMP DEG C | VISIBILITY (MI) | CLD (TENTHS) | (1/L)*10 | TEMP DEG C | VISIBILITY (MI) | CLD (TENTHS) | (1/L)*10 | TEMP DEG C |
| USTAR | TEMP DEG C | VISIBILITY (MI) | CLD (TENTHS) | USTAR | TEMP DEG C | VISIBILITY (MI) | CLD (TENTHS) | USTAR | TEMP DEG C |
| HEIGHT (M) | WD (M/S) | WS (M/S) | SIGA (DEG) | HEIGHT (M) | WD (M/S) | WS (M/S) | SIGA (DEG) | HEIGHT (M) | WD (M/S) |
| 1. | 82. | 1.56 | -1.12 | 1. | 82. | 1.56 | -1.12 | 1. | 82. |
| 2. | 78. | 1.70 | -1.06 | 2. | 78. | 1.70 | -1.06 | 2. | 78. |
| 4. | 77. | 2.17 | -0.42 | 4. | 77. | 2.17 | -0.42 | 4. | 77. |
| 8. | 81. | 1.91 | -0.07 | 8. | 81. | 1.91 | -0.07 | 8. | 81. |
| 16. | 94. | 1.25 | .06 | 16. | 94. | 1.25 | .06 | 16. | 94. |
| 32. | 162. | .67 | .13 | 32. | 162. | .67 | .13 | 32. | 162. |
| 48. | | | | 48. | | | | 48. | |

LEAST SQUARES FITTED DATA

| DATE 31/03/77 TIME 07:00:00 : DATE 31/03/77 TIME 08:00:00 : DATE 31/03/77 TIME 09:00:00 : | | | | | | | | | |
|---|-----------------|-----------------|-----------------|----------------|-----------------|-----------------|-----------------|----------------|-----------------|
| WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | |
| CLD (TENTHS) | TEMP DEG C | DEW POINT DEG C | VISIBILITY (MI) | CLD (TENTHS) | TEMP DEG C | DEW POINT DEG C | VISIBILITY (MI) | CLD (TENTHS) | TEMP DEG C |
| CLD HT (M) | DEW POINT DEG C | VISIBILITY (MI) | CLD (TENTHS) | CLD HT (M) | DEW POINT DEG C | VISIBILITY (MI) | CLD (TENTHS) | CLD HT (M) | DEW POINT DEG C |
| EXPCNENTS | TEMP DEG C | VISIBILITY (MI) | CLD (TENTHS) | EXPCNENTS | TEMP DEG C | VISIBILITY (MI) | CLD (TENTHS) | EXPCNENTS | TEMP DEG C |
| NET RADIATION | TEMP DEG C | VISIBILITY (MI) | CLD (TENTHS) | NET RADIATION | TEMP DEG C | VISIBILITY (MI) | CLD (TENTHS) | NET RADIATION | TEMP DEG C |
| RICHARDSON NJ. | TEMP DEG C | VISIBILITY (MI) | CLD (TENTHS) | RICHARDSON NJ. | TEMP DEG C | VISIBILITY (MI) | CLD (TENTHS) | RICHARDSON NJ. | TEMP DEG C |
| (1/L)*10 | TEMP DEG C | VISIBILITY (MI) | CLD (TENTHS) | (1/L)*10 | TEMP DEG C | VISIBILITY (MI) | CLD (TENTHS) | (1/L)*10 | TEMP DEG C |
| USTAR | TEMP DEG C | VISIBILITY (MI) | CLD (TENTHS) | USTAR | TEMP DEG C | VISIBILITY (MI) | CLD (TENTHS) | USTAR | TEMP DEG C |
| HEIGHT (M) | WD (M/S) | WS (M/S) | SIGA (DEG) | HEIGHT (M) | WD (M/S) | WS (M/S) | SIGA (DEG) | HEIGHT (M) | WD (M/S) |
| 1.0 | 2.41 | -1.17 | 2.0 | 1.0 | 2.41 | -1.17 | 2.0 | 1.0 | 2.41 |
| 2.0 | 2.08 | -1.09 | 3.6 | 2.0 | 2.08 | -1.09 | 3.6 | 2.0 | 2.08 |
| 4.0 | 1.79 | -.93 | 6.4 | 4.0 | 1.79 | -.93 | 6.4 | 4.0 | 1.79 |
| 8.0 | 1.54 | -.64 | 11.2 | 8.0 | 1.54 | -.64 | 11.2 | 8.0 | 1.54 |
| 16.0 | 1.33 | -.18 | 19.8 | 16.0 | 1.33 | -.18 | 19.8 | 16.0 | 1.33 |
| 32.0 | 1.15 | .26 | 34.9 | 32.0 | 1.15 | .26 | 34.9 | 32.0 | 1.15 |
| 48.0 | 1.05 | .06 | 48.6 | 48.0 | 1.05 | .06 | 48.6 | 48.0 | 1.05 |
| DU/DZ | DTM/DZ | BU*100 | RI | DU/DZ | DTM/DZ | BU*100 | RI | DU/DZ | DTM/DZ |
| 4.0 | -.0892 | .0847 | 1.520 | 4.0 | -.0892 | .0847 | 1.520 | 4.0 | -.0892 |
| 8.0 | -.0384 | .0723 | 6.981 | 8.0 | -.0384 | .0723 | 6.981 | 8.0 | -.0384 |
| 16.0 | -.0166 | .0474 | 24.636 | 16.0 | -.0166 | .0474 | 24.636 | 16.0 | -.0166 |
| 39.2* | -.0363 | .0144 | 80.906 | 39.2* | -.0363 | .0144 | 80.906 | 39.2* | -.0363 |

* OBSERVED DATA

OBSERVED DATA

```

: DATE 31/03/77 TIME 10:00:00 : DATE 31/03/77 TIME 11:00:00 : DATE 31/03/77 TIME 12:00:00 :
: WEATHER : WEATHER : WEATHER :
: TEMP DEG C 4.5 : TEMP DEG C 6.8 : TEMP DEG C 7.8 :
: DEW POINT DEG C -6.1 : DEW POINT DEG C -6.4 : DEW POINT DEG C -6.7 :
: VISIBILITY (MI) 85 : VISIBILITY (MI) 85 : VISIBILITY (MI) 85 :
: LOW 1 MID HI 1 TOTL 2:LOW 4 MID HI 1 TOTL 5:LOW 4 MID HI 1 TOTL 5:
: CLD (TENTHS) : CLD HT (M) : CLD HT (M) :
: EXPONENTS : A = -.08 B = .34 P = .06 : A = -.15 B = .14 P = .12 : A = -.10 B = .21 P = .13 :
: NET RADIATION : 38.80 MW/CM2 : 43.54 MW/CM2 : 47.17 MW/CM2 :
: RICHARDSON NO.: (4M) -.94 (8M)-2.84(16M)-6.11 : (4M) -.34 (8M) -.95(16M)-1.90 : (4M) -.29 (8M) -.81(16M)-1.56 :
: (1/L)*10 : (39.192M)-3.95 (OBSERVED DATA): (39.192M) -.79 (OBSERVED DATA): (39.192M) .21 (OBSERVED DATA):
: USTAR : (4M)-2.50 (8M)-3.75 (16M)-4.01 : (4M) -.94 (8M)-1.27 (16M)-1.26 : (4M) -.80 (8M)-1.08 (16M)-1.04 :
: (4M)-2.795 (8M)-2.860 (16M)-2.835 : (4M)-2.086 (8M)-2.139 (16M)-2.166 : (4M)-2.517 (8M)-2.569 (16M)-2.590 :

```

```

: WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE :
: HEIGHT (M) : (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) :
1. : 3.96 : 270. : 2.19 5.05 37.6 : 250. : 2.80 6.19 29.9 :
2. : 353. : 2.72 3.67 24.4 : 267. : 2.29 4.62 35.4 : 249. : 2.74 5.54 29.2 :
4. : 350. : 2.70 3.00 23.7 : 8.7: 261. : 2.66 4.45 34.2 12.0: 240. : 3.16 5.34 29.5 9.6:
8. : 341. : 3.12 3.03 22.4 : 9.3: 268. : 2.86 4.27 28.7 12.8: 248. : 3.39 5.14 26.9 9.9:
16. : 347. : 3.15 2.86 21.9 : 13.2: 271. : 3.07 3.94 25.6 13.0: 246. : 3.80 4.77 23.7 11.5:
32. : 348. : 3.18 2.59 19.7 : 15.4: 272. : 3.19 3.76 23.6 16.0: 245. : 4.03 4.63 22.1 14.2:
48. : 346. : 3.30 2.33 18.9 :

```

LEAST SQUARES FITTED DATA

```

: WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE :
: HEIGHT (M) : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) :
1.0 : 2.59 3.61 26.3 4.1 : 2.00 5.00 43.5 8.9 : 2.44 6.03 33.5 5.9 :
2.0 : 2.71 3.55 24.9 5.1 : 2.18 4.94 39.2 9.7 : 2.66 5.95 31.4 6.9 :
4.0 : 2.83 3.43 23.5 6.5 : 2.37 4.82 35.3 10.7 : 2.90 5.81 29.4 7.9 :
8.0 : 2.96 3.20 22.2 8.2 : 2.59 4.60 31.8 11.7 : 3.17 5.54 27.5 9.1 :
16.0 : 3.10 2.84 21.0 10.3 : 2.82 4.25 28.6 12.9 : 3.45 5.11 25.7 10.5 :
32.0 : 3.24 2.41 19.9 13.0 : 3.07 3.83 25.8 14.2 : 3.77 4.64 24.1 12.2 :
48.0 : 3.32 2.40 19.3 14.9 : 3.23 3.81 24.3 15.0 : 3.96 4.69 23.1 13.2 :
: DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI :
4.0 : .0422 -.0472 -.334 -.05 : .0684 -.0452 -.453 -.17 : .0841 -.0583 -.389 -.14 :
8.0 : .0221 -.0391 -1.013 -.38 : .0373 -.0375 -1.267 -.95 : .0458 -.0481 -1.081 -.81 :
16.0 : .0116 -.0229 -2.175 -1.94 : .0203 -.0222 -2.529 -4.76 : .0250 -.0277 -2.097 -3.68 :
39.2* : .0075 -.0062 -3.263 -12.01 : .0075 -.0013 -.696 -1.15 : .0144 .0013 .444 .00 :

```

* OBSERVED DATA

OBSERVED DATA

: DATE 31/03/77 TIME 13:00:00 : DATE 31/03/77 TIME 14:00:00 : DATE 31/03/77 TIME 15:00:00 :
 : WEATHER : WEATHER : WEATHER :
 : TEMP DEG C 8.7 : TEMP DEG C 9.9 : TEMP DEG C 8.9 :
 : DEW POINT DEG C -7.9 : DEW POINT DEG C -12.2 : DEW POINT DEG C -10.1 :
 : VISIBILITY (MI) 85 : VISIBILITY (MI) 60 : VISIBILITY (MI) 40 :
 : CLO (TENTHS) : CLO (TENTHS) : CLO (TENTHS) :
 : CLO HT (M) : CLO HT (M) : CLO HT (M) :
 : EXPONENTS : EXPONENTS : EXPONENTS :
 : A = -.03 B = .29 P = .09 : A = -.11 B = .32 P = .08 : A = -.12 B = .28 P = .11 :
 : NET RADIATION : NET RADIATION : NET RADIATION :
 : RICHARDSON NO. : RICHARDSON NO. : RICHARDSON NO. :
 : (1/L)*10 : (1/L)*10 : (1/L)*10 :
 : USTAR : USTAR : USTAR :

: WS TEMP SIGA SIGE : WS TEMP SIGA SIGE : WS TEMP SIGA SIGE :
 : (DEG) (M/S) (C) (DEG) (DEG) (DEG) (DEG) (DEG) (DEG) (DEG) :
 : 1. : 2. : 3. : 4. : 5. : 6. : 7. : 8. : 9. : 10. :
 : 237. : 237. : 237. : 237. : 237. : 237. : 237. : 237. : 237. : 237. :
 : 2.27 : 2.48 : 2.66 : 2.73 : 2.80 : 2.94 : 3.17 : 3.30 : 3.43 : 3.56 :
 : 6.12 : 6.12 : 6.12 : 6.12 : 6.12 : 6.12 : 6.12 : 6.12 : 6.12 : 6.12 :
 : 31.2 : 31.7 : 32.2 : 32.7 : 33.2 : 33.7 : 34.2 : 34.7 : 35.2 : 35.7 :
 : 254. : 252. : 250. : 248. : 246. : 244. : 242. : 240. : 238. : 236. :
 : 3.09 : 3.39 : 3.61 : 3.76 : 3.86 : 3.93 : 4.00 : 4.06 : 4.12 : 4.18 :
 : 7.17 : 6.69 : 6.47 : 6.28 : 6.01 : 5.96 : 5.96 : 5.96 : 5.96 : 5.96 :
 : 34.7 : 33.8 : 31.3 : 30.1 : 27.8 : 24.1 : 21.8 : 19.5 : 17.2 : 15.0 :
 : 248. : 245. : 240. : 241. : 241. : 240. : 240. : 240. : 240. : 240. :
 : 3.58 : 3.91 : 4.26 : 4.54 : 4.83 : 5.14 : 5.44 : 5.74 : 6.04 : 6.34 :
 : 7.54 : 6.88 : 6.77 : 6.57 : 6.15 : 6.00 : 5.84 : 5.68 : 5.52 : 5.36 :
 : 22.8 : 21.6 : 20.5 : 19.0 : 17.1 : 15.6 : 14.1 : 12.7 : 11.3 : 10.0 :

LEAST SQUARES FITTED DATA

: WS TEMP SIGA SIGE : WS TEMP SIGA SIGE : WS TEMP SIGA SIGE :
 : (M/S) (C) (DEG) (DEG) (DEG) (DEG) (DEG) (DEG) (DEG) (DEG) :
 : 1.0 : 2.0 : 3.0 : 4.0 : 5.0 : 6.0 : 7.0 : 8.0 : 9.0 : 10.0 :
 : 2.16 : 2.30 : 2.45 : 2.60 : 2.77 : 2.94 : 3.05 : 3.17 : 3.30 : 3.43 :
 : 6.02 : 5.96 : 5.85 : 5.64 : 5.30 : 4.95 : 5.01 : 5.01 : 5.01 : 5.01 :
 : 32.3 : 31.7 : 31.1 : 30.5 : 29.9 : 29.3 : 29.0 : 29.0 : 29.0 : 29.0 :
 : 6.6 : 8.0 : 9.8 : 12.0 : 14.6 : 17.8 : 20.0 : 20.0 : 20.0 : 20.0 :
 : 3.00 : 3.17 : 3.34 : 3.53 : 3.73 : 3.93 : 4.06 : 4.06 : 4.06 : 4.06 :
 : 7.12 : 7.04 : 6.91 : 6.66 : 6.26 : 5.87 : 6.02 : 6.02 : 6.02 : 6.02 :
 : 38.6 : 35.9 : 33.4 : 31.0 : 28.8 : 26.8 : 25.7 : 25.7 : 25.7 : 25.7 :
 : 6.2 : 7.7 : 9.6 : 11.9 : 14.9 : 18.5 : 21.1 : 21.1 : 21.1 : 21.1 :
 : 3.35 : 3.61 : 3.90 : 4.20 : 4.54 : 4.89 : 5.12 : 5.12 : 5.12 : 5.12 :
 : 7.44 : 7.36 : 7.22 : 6.95 : 6.51 : 6.03 : 6.05 : 6.05 : 6.05 : 6.05 :
 : 25.4 : 23.4 : 21.6 : 20.0 : 18.4 : 17.0 : 16.2 : 16.2 : 16.2 : 16.2 :
 : 4.2 : 5.2 : 6.3 : 7.6 : 9.3 : 11.3 : 12.7 : 12.7 : 12.7 : 12.7 :

* OBSERVED DATA

OBSERVED DATA

```

: DATE 31/03/77 TIME 16:00:00 : DATE 31/03/77 TIME 17:00:00 : DATE 31/03/77 TIME 18:00:00 :
: WEATHER : WEATHER : WEATHER :
: TEMP DEG C 8.9 : TEMP DEG C 8.7 : TEMP DEG C 8.9 :
: DEW POINT DEG C -8.9 : DEW POINT DEG C -9.4 : DEW POINT DEG C -9.4 :
: VISIBILITY (MI) 85 : VISIBILITY (MI) 50 : VISIBILITY (MI) 50 :
: CLD (TENTHS) :LOW 4 MID HI 1 TOTL 5:LOW 3 MID HI TOTL 3:LOW 1 MID HI TOTL 1:
: CLD HT (M) :LOW 1830 MID HI 7620 :LOW 1830 MID HI :LOW 1830 MID HI :
: EXPONENTS : A = -.06 B = .15 P = .10 : A = -.15 B = .25 P = .11 : A = -.17 B = .14 P = .13 :
: NET RADIATION : 20.30 MW/CM2 : 7.26 MW/CM2 : -5.79 MW/CM2 :
: RICHARDSON NO.: (4M) -.21 (8M) -.65 (16M) -1.59 : (4M) -.09 (8M) -.26 (16M) -.55 : (4M) -.00 (8M) -.01 (16M) -.04 :
: (1/L)*10 : (39.192M)-2.20 (OBSERVED DATA): (39.192M)-1.17 (OBSERVED DATA): (39.192M)-1.36 (OBSERVED DATA):
: USTAR : (4M) -.60 (8M) -.87 (16M) -1.06 : (4M) -.27 (8M) -.36 (16M) -.37 : (4M) -.01 (8M) -.01 (16M) -.03 :
: : (4M).2854 (8M).2860 (16M).2897 : (4M).3443 (8M).3392 (16M).3369 : (4M).2209 (8M).2120 (16M).2094 :

```

```

: WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE :
: HEIGHT (M) : (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) :
: 1. : 7.76 : 256. : 3.91 7.30 14.5 : 254. : 2.59 6.85 15.3 :
: 2. : 278. : 256. : 4.25 6.53 13.0 : 253. : 2.90 6.21 14.5 :
: 4. : 276. : 8.1: 247. : 6.2: 242. : 3.33 6.60 13.2 :
: 8. : 266. : 8.4: 255. : 6.6: 247. : 3.60 6.56 11.9 :
: 16. : 272. : 10.3: 254. : 8.3: 240. : 3.81 6.36 10.1 :
: 32. : 269. : 10.4: 257. : 9.5: 237. : 3.98 6.13 8.9 :
: 48. : 268. : 18.6 10.4: 257. : 9.5: 237. : 3.98 6.13 8.9 :

```

LEAST SQUARES FITTED DATA

```

: WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE :
: HEIGHT (M) : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) :
: 1.0 : 2.95 7.51 23.6 5.8 : 3.67 7.13 15.7 3.5 : 2.42 6.66 18.1 4.1 :
: 2.0 : 3.15 7.46 22.6 6.4 : 3.96 7.08 14.2 4.2 : 2.66 6.65 16.1 4.5 :
: 4.0 : 3.37 7.37 21.7 7.2 : 4.27 7.00 12.8 5.0 : 2.92 6.63 14.3 5.0 :
: 8.0 : 3.60 7.20 20.8 8.0 : 4.62 6.83 11.6 5.9 : 3.20 6.59 12.7 5.5 :
: 16.0 : 3.85 6.89 19.9 8.9 : 4.99 6.56 10.4 7.0 : 3.51 6.50 11.3 6.1 :
: 32.0 : 4.12 6.45 19.1 9.8 : 5.38 6.21 9.4 8.3 : 3.85 6.33 10.1 6.7 :
: 48.0 : 4.29 6.24 18.7 10.5 : 5.63 6.13 8.9 9.2 : 4.07 6.15 9.4 7.2 :

```

```

: DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI :
: 4.0 : .0753 -.0345 -.170 -.05 : .1096 -.0313 -.096 -.05 : .0906 -.0005 -.003 -.00 :
: 8.0 : .0402 -.0300 -.517 -.19 : .0592 -.0262 -.275 -.13 : .0497 -.0006 -.013 -.01 :
: 16.0 : .0215 -.0210 -1.269 -1.59 : .0320 -.0159 -.575 -.55 : .0273 -.0008 -.059 -.04 :
: 39.2* : .0137 -.0119 -3.661 -19.49 : .0075 -.0019 -.340 -.31 : .0106 -.0044 -1.560 -4.03 :

```

* OBSERVED DATA

OBSERVED DATA

| | DATE 31/03/77 | TIME 22:00:00 | DATE 31/03/77 | TIME 23:00:00 | DATE 01/04/77 | TIME 00:00:00 |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| WEATHER | TEMP DEG C -2.2 | WEATHER | TEMP DEG C -1.9 | WEATHER | TEMP DEG C -2.6 | |
| DEW POINT DEG C -12.6 | DEW POINT DEG C -11.7 | DEW POINT DEG C -11.7 | DEW POINT DEG C -12.2 | DEW POINT DEG C -12.2 | DEW POINT DEG C -12.2 | |
| VISIBILITY (MI) 25 | VISIBILITY (MI) 25 | VISIBILITY (MI) 25 | VISIBILITY (MI) 20 | VISIBILITY (MI) 20 | VISIBILITY (MI) 20 | |
| CLD (TENTHS) :LOW | CLD (TENTHS) :LOW | CLD (TENTHS) :LOW | CLD (TENTHS) :LOW | CLD (TENTHS) :LOW | CLD (TENTHS) :LOW | |
| CLD HT (M) | CLD HT (M) | CLD HT (M) | CLD HT (M) | CLD HT (M) | CLD HT (M) | |
| EXPONENTS | EXPONENTS | EXPONENTS | EXPONENTS | EXPONENTS | EXPONENTS | |
| NET RADIATION | NET RADIATION | NET RADIATION | NET RADIATION | NET RADIATION | NET RADIATION | |
| RICHARDSON NO.: | RICHARDSON NO.: | RICHARDSON NO.: | RICHARDSON NO.: | RICHARDSON NO.: | RICHARDSON NO.: | |
| (1/L)*10 | (1/L)*10 | (1/L)*10 | (1/L)*10 | (1/L)*10 | (1/L)*10 | |
| USTAR | USTAR | USTAR | USTAR | USTAR | USTAR | |

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) |
|------------|----------|----------|------------|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|----------|
| 1. | 150. | 1.44 | -1.36 | 7.1 | 145. | 2.40 | -1.74 | 6.8 | 89. | 1.37 | -1.88 | 10.1 | | | |
| 2. | 153. | 2.05 | -1.16 | 6.4 | 142. | 3.02 | -2.02 | 6.4 | 88. | 1.56 | -2.29 | 9.7 | | | |
| 4. | 162. | 2.75 | .44 | 3.5 | 139. | 3.91 | -1.28 | 4.2 | 92. | 1.78 | -1.91 | 8.0 | | | |
| 8. | 183. | 3.79 | 3.42 | 3.8 | 153. | 5.49 | 1.84 | 2.8 | 7. | 2.48 | -1.74 | 7.0 | | | |
| 16. | 187. | 4.18 | 4.93 | 1.9 | 155. | 5.31 | 3.69 | 1.5 | 9. | 4.25 | -0.04 | 5.4 | | | |
| 32. | 188. | 4.28 | 4.86 | .8 | 160. | 5.19 | 3.64 | 2.6 | 1.0 | 3.87 | 1.64 | 8.4 | | | |
| 48. | | | | | | | | | | | | | | | |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) |
|------------|----------|----------|------------|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|----------|
| 1.0 | 1.24 | -1.85 | 13.6 | 5.1 | 2.16 | -2.38 | 9.8 | 3.8 | 3.8 | 95 | -2.08 | 10.9 | 10.1 | | |
| 2.0 | 1.59 | -1.46 | 8.8 | 3.2 | 2.59 | -2.08 | 7.3 | 2.9 | 2.9 | 1.23 | -2.06 | 9.9 | 7.9 | | |
| 4.0 | 2.02 | -0.71 | 5.8 | 2.0 | 3.10 | -1.49 | 5.4 | 2.2 | 2.2 | 1.60 | -2.02 | 9.0 | 6.2 | | |
| 8.0 | 2.58 | .66 | 3.7 | 1.3 | 3.73 | -.41 | 4.1 | 1.6 | 1.6 | 2.07 | -1.91 | 8.2 | 4.9 | | |
| 16.0 | 3.29 | 2.88 | 2.4 | .8 | 4.47 | 1.39 | 3.0 | 1.2 | 1.2 | 2.69 | -1.55 | 7.5 | 3.8 | | |
| 32.0 | 4.19 | 5.22 | 1.6 | .5 | 5.37 | 3.53 | 2.2 | .9 | .9 | 3.49 | -.28 | 6.8 | 3.0 | | |
| 48.0 | 4.83 | 4.78 | 1.2 | .4 | 5.97 | 3.73 | 1.9 | .8 | .8 | 4.06 | 1.72 | 6.5 | 2.6 | | |
| | DU/DZ | OTH/DZ | BU*100 | RI | DU/DZ | OTH/DZ | BU*100 | RI | DU/DZ | OTH/DZ | BU*100 | RI | | | |
| 4.0 | .1655 | .3629 | 5.110 | .00 | .1898 | .2876 | 1.722 | .00 | .00 | .1402 | .0353 | .800 | .00 | | |
| 8.0 | .1055 | .3086 | 10.634 | .00 | .1139 | .2498 | 4.138 | .00 | .00 | .0909 | .0495 | 2.668 | .00 | | |
| 16.0 | .0673 | .1999 | 16.811 | .00 | .0683 | .1742 | 7.959 | .00 | .00 | .0590 | .0781 | 9.975 | .00 | | |
| 39.2* | .0063 | .0056 | 1.706 | .00 | -.0075 | .0069 | 1.353 | .00 | .00 | -.0238 | .1150 | 37.983 | .00 | | |

* OBSERVED DATA

[illegible]

| HEIGHT (M) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : |
|--------------|------------|------------|--------------|--------------|------------|------------|--------------|--------------|------------|------------|--------------|--------------|
| 1.0 : | .84 : | -2.35 : | 25.1 : | 4.9 : | 3.09 : | -2.12 : | 10.7 : | .2 : | 1.93 : | -.33 : | 13.9 : | .4 : |
| 2.0 : | 1.03 : | -2.22 : | 19.6 : | 4.4 : | 2.56 : | -2.00 : | 10.8 : | .4 : | 1.82 : | -.31 : | 13.9 : | .8 : |
| 4.0 : | 1.26 : | -1.96 : | 15.4 : | 3.9 : | 2.11 : | -1.76 : | 10.9 : | .7 : | 1.72 : | -.27 : | 13.9 : | 1.4 : |
| 8.0 : | 1.54 : | -1.45 : | 12.0 : | 3.5 : | 1.75 : | -1.30 : | 11.0 : | 1.4 : | 1.62 : | -.18 : | 13.9 : | 2.6 : |
| 16.0 : | 1.89 : | -.46 : | 9.4 : | 3.1 : | 1.45 : | -.42 : | 11.1 : | 2.9 : | 1.52 : | .03 : | 13.9 : | 4.8 : |
| 32.0 : | 2.31 : | 1.41 : | 7.4 : | 2.7 : | 1.20 : | 1.16 : | 11.3 : | 5.7 : | 1.43 : | .59 : | 13.9 : | 8.7 : |
| 48.0 : | 2.60 : | 3.15 : | 6.4 : | 2.5 : | 1.07 : | 2.51 : | 11.3 : | 8.5 : | 1.38 : | 1.33 : | 13.9 : | 12.3 : |
| ----- | | | | | | | | | | | | |
| : | DU/DZ : | DTH/DZ : | BU*100 : | RI : | DU/DZ : | DTH/DZ : | BU*100 : | RI : | DU/DZ : | DTH/DZ : | BU*100 : | RI : |
| ----- | | | | | | | | | | | | |
| 4.0 : | .0856 : | .1375 : | 5.020 : | .00 : | -.1348 : | .1264 : | 1.632 : | .00 : | -.0342 : | .0318 : | .622 : | .00 : |
| 8.0 : | .0524 : | .1348 : | 13.101 : | .00 : | -.0557 : | .1218 : | 9.185 : | .00 : | -.0161 : | .0353 : | 3.106 : | .00 : |
| 16.0 : | .0321 : | .1294 : | 33.417 : | .00 : | -.0230 : | .1125 : | 49.501 : | .00 : | -.0076 : | .0422 : | 16.731 : | .00 : |
| 39.2* : | -.0200 : | .0862 : | 78.751 : | .00 : | -.0606 : | .0531 : | 266.677 : | .00 : | -.0725 : | .0481 : | 143.170 : | .00 : |

A-162

AD-A049 036

ARMY DUGWAY PROVING GROUND UTAH
TURBULENCE MEASUREMENTS ON A FORTY-EIGHT METER TOWER IN DESERT --ETC(U)
OCT 77 A W WALDRON

F/G 4/2

UNCLASSIFIED

NL

3 OF 5
AD
A049036



OBSERVED DATA

DATE 01/04/77 TIME 07:00:00 : DATE 01/04/77 TIME 08:00:00 : DATE 01/04/77 TIME 09:00:00 :
 : WEATHER SW- : WEATHER : WEATHER SW- :
 : TEMP DEG C 1.1 : TEMP DEG C 0.6 : TEMP DEG C 0.6 :
 : DEW POINT DEG C -3.2 : DEW POINT DEG C -1.7 : DEW POINT DEG C -2.2 :
 : VISIBILITY (MI) 1 : VISIBILITY (MI) 8 : VISIBILITY (MI) 10 :
 : LOW 7 MID 3 HI TOTAL 10:LOW 7 MID 3 HI TOTAL 10:LOW 6 MID 4 HI TOTAL 10: :
 : LOW 915 MID 2440 HI : LOW 915 MID 2440 HI : LOW 915 MID 2440 HI :
 : A = -.27 B = -.36 P = .23 : A = -.22 B = -.04 P = .12 : A = -.23 B = .06 P = .09 :
 : -1.81 MW/CM2 : 1.04 MW/CM2 : 2.93 MW/CM2 :
 RICHARDSON NO.: (4M) -.36 (8M) -.67 (16M) .33 : (4M) -.70 (8M) -1.51 (16M) .64 : (4M) -.37 (8M) -.76 (16M) 1.13 :
 : (39.192M) 8.38 (OBSERVED DATA): (39.192M) 66.95 (OBSERVED DATA): (39.192M) ***** (OBSERVED DATA):
 (1/L)*10 : (4M) -.99 (8M) -.90 (16M) 1.19 : (4M) -1.87 (8M) -2.00 (16M) 4.30 : (4M) -1.00 (8M) -1.02 (16M) 12.58 :
 USTAR : (4M) .2080 (8M) .2194 (16M) .1034 : (4M) .2687 (8M) .2698 (16M) .0749 : (4M) .2875 (8M) .2781 (16M) .0558 :

| HEIGHT (M) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|
| 1. | | 6.33 | | | | | | 6.07 | | | | | 4.48 | | |
| 2. | 171. | 2.04 | .00 | 7.8 | | 169. | 2.51 | .62 | 8.4 | | 145. | 2.88 | 1.23 | 9.5 | |
| 4. | 169. | 2.38 | -.49 | 7.0 | | 166. | 2.87 | .15 | 6.9 | | 140. | 3.30 | .74 | 7.5 | |
| 8. | 165. | 2.71 | .85 | 6.2 | 5.4 | 161. | 3.21 | .99 | 6.1 | 3.8 | 137. | 3.67 | 1.30 | 5.8 | 4.2 |
| 16. | 169. | 3.09 | 2.98 | 5.5 | 4.5 | 165. | 3.39 | 3.54 | 5.2 | 3.5 | 141. | 3.81 | 3.72 | 4.8 | 4.1 |
| 32. | 168. | 3.75 | .34 | 4.8 | 3.5 | 162. | 3.57 | .72 | 4.1 | 3.3 | 138. | 3.80 | 1.05 | 4.8 | 4.2 |
| 48. | 171. | 4.36 | 5.67 | 2.9 | 2.7 | 162. | 3.76 | 4.81 | 4.3 | 3.6 | 140. | 3.88 | 3.45 | 4.7 | 4.7 |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------|----------|------------|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|
| 1.0 | 1.71 | 2.56 | 10.2 | 11.8 | | 2.40 | 2.73 | 9.6 | 4.0 | | 2.88 | 2.40 | 10.2 | 3.6 |
| 2.0 | 2.00 | 2.35 | 8.5 | 9.2 | | 2.60 | 2.57 | 8.2 | 3.9 | | 3.06 | 2.33 | 8.7 | 3.8 |
| 4.0 | 2.35 | 1.96 | 7.1 | 7.1 | | 2.83 | 2.27 | 7.0 | 3.8 | | 3.25 | 2.21 | 7.4 | 3.9 |
| 8.0 | 2.76 | 1.32 | 5.9 | 5.6 | | 3.08 | 1.78 | 6.0 | 3.7 | | 3.45 | 2.01 | 6.4 | 4.1 |
| 16.0 | 3.24 | .62 | 4.9 | 4.3 | | 3.34 | 1.22 | 5.2 | 3.6 | | 3.66 | 1.78 | 5.5 | 4.2 |
| 32.0 | 3.80 | 1.49 | 4.1 | 3.4 | | 3.63 | 1.77 | 4.4 | 3.5 | | 3.89 | 2.03 | 4.7 | 4.4 |
| 48.0 | 4.17 | 5.39 | 3.7 | 2.9 | | 3.82 | 4.56 | 4.0 | 3.4 | | 4.03 | 3.20 | 4.3 | 4.5 |

| | DU/DZ | OTH/DZ | BU*100 | RI | DU/DZ | OTH/DZ | BU*100 | RI |
|-------|-------|--------|---------|-------|-------|--------|---------|-------|
| 4.0 | .1256 | -.1606 | -1.656 | -1.24 | .0787 | -.1211 | -.860 | -.35 |
| 8.0 | .0737 | -.1014 | -3.047 | -6.11 | .0428 | -.0775 | -1.866 | -1.51 |
| 16.0 | .0432 | .0170 | 1.485 | .00 | .0232 | .0097 | .797 | .00 |
| 39.2* | .0381 | .3431 | 115.595 | .00 | .0119 | .2656 | 108.523 | .00 |

* OBSERVED DATA

OBSERVED DATA

| | DATE 01/04/77 | TIME 10:00:00 | DATE 01/04/77 | TIME 11:00:00 | DATE 01/04/77 | TIME 12:00:00 | |
|----------------|--|--|--|-------------------|----------------------|-------------------|----------|
| | WEATHER SW- | | WEATHER | | WEATHER SW | | |
| | TEMP DEG C 2.8 | | TEMP DEG C 3.5 | | TEMP DEG C 1.2 | | |
| | DEW POINT DEG C -1.1 | | DEW POINT DEG C -1.7 | | DEW POINT DEG C -2.2 | | |
| | VISIBILITY (MI) 5 | | VISIBILITY (MI) 10 | | VISIBILITY (MI) .25 | | |
| CLD (TENTHS) | LOW 6 MID 4 HI | TOTAL 10:LOW 4 HI | TOTAL 10:LOW 4 HI | TOTAL 10:LOW 4 HI | TOTAL 10:LOW 4 HI | TOTAL 10:LOW 4 HI | |
| CLD HT (M) | LOW 915 MID 4875 HI | LOW 915 MID 4875 HI | LOW 152 MID | HI | HI | | |
| EXPONENTS | A = -.07 B = .16 P = .19 | A = -.15 B = -.22 P = .17 | A = -.32 B = -.27 P = .14 | | | | |
| NET RADIATION | 1.81 MW/CM2 | 7.26 MW/CM2 | 25.40 MW/CM2 | | | | |
| RICHARDSON NO. | (4M) -.02 (8M) -.05 (16M) -.08 | (4M) .25 (8M) .70 (16M) 1.76 | (4M) .13 (8M) .34 (16M) .61 | | | | |
| | (39.192M) .32 (OBSERVED DATA) | (39.192M) 4.05 (OBSERVED DATA) | (39.192M) .14 (OBSERVED DATA) | | | | |
| (1/L)*10 | (4M) -.06 (8M) -.07 (16M) -.06 | (4M) 2.87 (8M) 10.08 (16M) 30.19 | (4M) .90 (8M) 2.53 (16M) 3.82 | | | | |
| USTAR | (4M).2719 (8M).2740 (16M).2799 | (4M).1633 (8M).0975 (16M).0538 | (4M).3138 (8M).2186 (16M).1654 | | | | |
| HEIGHT (M) | WD (M/S) WS TEMP (C) SIGA (DEG) SIGE (DEG) | WD (M/S) WS TEMP (C) SIGA (DEG) SIGE (DEG) | WD (M/S) WS TEMP (C) SIGA (DEG) SIGE (DEG) | | | | |
| 1. | 294. | 2.95 | 2.76 | 18.3 | 292. | 3.29 | .97 10.9 |
| 2. | 291. | 3.66 | 2.36 | 17.1 | 289. | 4.09 | .43 9.5 |
| 4. | 285. | 4.19 | 2.55 | 16.4 | 284. | 4.56 | 2.53 8.8 |
| 8. | 287. | 4.56 | 2.41 | 15.9 | 287. | 5.03 | 4.86 7.5 |
| 16. | 284. | 5.29 | 2.16 | 15.4 | 285. | 5.39 | 3.15 7.1 |
| 32. | 283. | 5.52 | 2.03 | 14.5 | 287. | 6.06 | 6.21 6.7 |
| 48. | | | | | | | |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (M/S) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (M/S) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------|----------|------------|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|
| 1.0 | 2.71 | 2.69 | 19.0 | 3.7 | 3.07 | 3.07 | 1.90 | 11.9 | 7.0 | 4.85 | 1.57 | 10.8 | 7.1 | |
| 2.0 | 3.10 | 2.67 | 18.2 | 4.2 | 3.47 | 3.47 | 1.07 | 10.7 | 6.0 | 5.35 | 1.70 | 8.7 | 5.9 | |
| 4.0 | 3.53 | 2.62 | 17.3 | 4.7 | 3.91 | 3.91 | 1.41 | 9.6 | 5.2 | 5.90 | 1.96 | 7.0 | 4.9 | |
| 8.0 | 4.03 | 2.53 | 16.5 | 5.3 | 4.41 | 4.41 | 2.04 | 8.7 | 4.5 | 6.51 | 2.43 | 5.6 | 4.1 | |
| 16.0 | 4.60 | 2.37 | 15.8 | 5.9 | 4.98 | 4.98 | 3.16 | 7.8 | 3.8 | 7.17 | 3.12 | 4.5 | 3.4 | |
| 32.0 | 5.25 | 2.15 | 15.1 | 6.6 | 5.62 | 5.62 | 4.81 | 7.0 | 3.3 | 7.91 | 3.59 | 3.6 | 2.8 | |
| 48.0 | 5.67 | 2.04 | 14.7 | 7.1 | 6.03 | 6.03 | 5.67 | 6.6 | 3.0 | 8.38 | 2.84 | 3.1 | 2.5 | |
| | DU/DZ | DT/DZ | BU*100 | RI | DU/DZ | DT/DZ | BU*100 | RI | DU/DZ | DT/DZ | BU*100 | RI | | |
| 4.0 | .1558 | -.0130 | -.059 | -.02 | .1578 | .1712 | .639 | .00 | .1927 | .1305 | .214 | -.14 | | |
| 8.0 | .0889 | -.0106 | -.149 | -.05 | .0890 | .1559 | 1.825 | .00 | .1063 | .1065 | .573 | .00 | | |
| 16.0 | .0507 | -.0060 | -.258 | -.08 | .0502 | .1253 | 4.5892 | .00 | .0586 | .0587 | 1.035 | .00 | | |
| 39.2* | .0144 | .0019 | .352 | .00 | .0419 | .2012 | 33.680 | .00 | .1619 | .1069 | 9.316 | .00 | | |

* OBSERVED DATA

OBSERVED DATA

| | | | | | |
|---|---|---|---------------|---------------|---------------|
| DATE 01/04/77 | TIME 13:00:00 | DATE 01/04/77 | TIME 14:00:00 | DATE 01/04/77 | TIME 15:00:00 |
| WEATHER S | WEATHER S | WEATHER SW- | | | |
| TEMP DEG C 1.7 | TEMP DEG C 4.7 | TEMP DEG C 5.2 | | | |
| DEW POINT DEG C -1.7 | DEW POINT DEG C -0.6 | DEW POINT DEG C -0.6 | | | |
| VISIBILITY (MI) .75 | VISIBILITY (MI) 1.0 | VISIBILITY (MI) 1.0 | | | |
| CLD (TENTHS) :LOW 10 MID HI | TOTL 10 :LOW 10 MID HI | TOTL 10 :LOW 10 MID HI | | | |
| CLD HT (M) :LOW 152 MID HI | :LOW 610 MID HI | :LOW 610 MID HI | | | |
| EXPONENTS :A= -.14 B= .03 P= .16 | :A= -.19 B= -.02 P= .15 | :A= -.16 B= -.09 P= .14 | | | |
| NET RADIATION :18.14 MW/CM2 | :25.40 MW/CM2 | :10.88 MW/CM2 | | | |
| RICHARDSON NO. : (4M) .09 (8M) .21 (16M) .17 | : (4M) -.03 (8M) -.07 (16M) -.19 | : (4M) -.01 (8M) -.03 (16M) -.07 | | | |
| (1/L)*10 : (39.192M) 5.15 (OBSERVED DATA) : (39.192M) .11 | : (OBSERVED DATA) : (39.192M) .11 | : (OBSERVED DATA) : (39.192M) .11 | | | |
| USTAR : (4M) .55 (8M) 1.13 (16M) .36 | : (4M) -.08 (8M) -.11 (16M) -.13 | : (4M) -.04 (8M) -.05 (16M) -.05 | | | |
| : (4M) .2563 (8M) .2016 (16M) .2223 | : (4M) .4141 (8M) .4087 (16M) .4132 | : (4M) .6908 (8M) .6724 (16M) .6668 | | | |
| HEIGHT (M) :WD WS TEMP SICA SIGE :WD WS TEMP SICA SIGE | :WD WS TEMP SICA SIGE :WD WS TEMP SICA SIGE | :WD WS TEMP SICA SIGE :WD WS TEMP SICA SIGE | | | |
| 1. : 308. 3.60 2.63 9.2 | : 292. 4.59 4.66 10.2 | : 274. 7.93 3.48 7.9 | | | |
| 2. : 302. 4.75 2.10 8.0 | : 288. 5.64 4.16 8.8 | : 272. 8.98 1.93 6.6 | | | |
| 4. : 300. 5.13 2.35 8.1 | : 4.5: 283. 6.13 4.07 7.6 | : 4.6: 268. 10.37 2.07 5.9 | | | |
| 16. : 303. 5.34 4.18 7.1 | : 4.4: 285. 6.63 3.88 6.6 | : 3.6: 270. 11.38 1.88 5.7 | | | |
| 32. : 301. 6.11 1.93 6.0 | : 4.4: 283. 6.66 3.79 5.9 | : 4.3: 268. 12.37 2.17 4.8 | | | |
| 48. : 302. 6.23 1.90 5.8 | : 4.8: 285. 8.06 3.24 5.7 | : 4.2: 268. 12.35 1.42 4.6 | | | |

LEAST SQUARES FITTED DATA

| | | | | | |
|--|---|---|--|--|--|
| HEIGHT (M) :WD WS TEMP SICA SIGE :WD WS TEMP SICA SIGE | :WD WS TEMP SICA SIGE :WD WS TEMP SICA SIGE | :WD WS TEMP SICA SIGE :WD WS TEMP SICA SIGE | | | |
| 1.0 : 3.52 2.34 10.3 4.2 | : 4.37 4.45 11.4 4.4 | : 7.35 2.60 8.6 5.4 | | | |
| 2.0 : 3.93 2.41 9.3 4.2 | : 4.83 4.42 10.0 4.3 | : 8.17 2.56 7.7 5.0 | | | |
| 4.0 : 4.38 2.54 8.4 4.3 | : 5.35 4.35 8.8 4.3 | : 9.03 2.47 6.8 4.7 | | | |
| 8.0 : 4.88 2.74 7.6 4.4 | : 5.93 4.21 7.7 4.2 | : 9.98 2.32 6.1 4.4 | | | |
| 16.0 : 5.44 2.98 6.9 4.5 | : 6.56 3.97 6.8 4.2 | : 11.04 2.05 5.5 4.1 | | | |
| 32.0 : 6.06 2.77 6.2 4.6 | : 7.27 3.58 6.0 4.1 | : 12.21 1.70 4.9 3.9 | | | |
| 48.0 : 6.45 1.65 5.9 4.6 | : 7.72 3.32 5.5 4.1 | : 12.94 1.60 4.6 3.7 | | | |
| DU/DZ DTH/DZ RU*100 RI : DU/DZ DTH/DZ RU*100 RI | : DU/DZ DTH/DZ RU*100 RI : DU/DZ DTH/DZ RU*100 RI | : DU/DZ DTH/DZ RU*100 RI : DU/DZ DTH/DZ RU*100 RI | | | |
| 4.0 : .1584 .0650 .193 .00 | : .1822 -.0240 -.047 -.03 | : .3029 -.0301 -.021 -.01 | | | |
| 8.0 : .0883 .0471 .450 .00 | : .1009 -.0215 -.138 -.07 | : .1674 -.0253 -.058 -.03 | | | |
| 16.0 : .0492 .0113 .346 .00 | : .0559 -.0164 -.345 -.19 | : .0926 -.0157 -.117 -.07 | | | |
| 39.2* : .0075 .0081 1.170 .00 | : .0875 -.0244 -2.495 -19.65 | : .0013 -.0369 -1.321 -.80 | | | |

* OBSERVED DATA

OBSERVED DATA

| DATE 04/04/77 TIME 09:00:00 : DATE 04/04/77 TIME 10:00:00 : DATE 04/04/77 TIME 11:00:00 : | | | | | | | | | |
|---|--------------|-----------------------|-----------------|---------------------|-----------|---------------------|-------------|---------------------|-------|
| WEATHER : WEATHER : WEATHER : | | | | | | | | | |
| TEMP DEG C | | 5.6 | TEMP DEG C | | 8.3 | TEMP DEG C | | 10.0 | |
| DEW POINT DEG C | | -5.3 | DEW POINT DEG C | | -5.0 | DEW POINT DEG C | | -3.3 | |
| VISIBILITY (MI) | | 70 | VISIBILITY (MI) | | 85 | VISIBILITY (MI) | | 85 | |
| CLD (TENTHS) | LOW | 9 MID | HI | TOTL | 9:LOW | 8 MID | HI | TOTL | 7: |
| CLD HT (M) | LOW | 1525 MID | HI | | LOW | 1830 MID | HI | | |
| EXPONENTS | A= | -0.18 B= | .24 P= | .07 | A= | .18 B= | -.12 P= | .01 | |
| NET RADIATION | 25.40 MW/CM2 | | | | | | | | |
| RICHARDSON NO. | (4M) | -0.87 (8M) | -2.61 (16M) | -5.32 | (4M) | -77.3 (8M) | -265. (16M) | -704. | |
| (1/L)*10 | (39.192M) | -9.02 (OBSERVED DATA) | (39.192M) | *** (OBSERVED DATA) | (39.192M) | *** (OBSERVED DATA) | (39.192M) | .00 (OBSERVED DATA) | |
| USTAR | (4M) | -2.34 (8M) | -3.44 (16M) | -3.50 | (4M) | -202. (8M) | -346. (16M) | -461. | |
| | (4M) | .2568 (8M) | .2619 (16M) | .2576 | (4M) | .6556 (8M) | 2.315 (16M) | | |
| WEATHER : WEATHER : WEATHER : | | | | | | | | | |
| WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | | | | | | | | | |
| HEIGHT (M) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) |
| 1. | | | 6.18 | | | | 8.49 | | 10.04 |
| 2. | 164. | 2.40 | 6.04 | 12.6 | | 78. | .92 | 8.35 | 45.2 |
| 4. | 158. | 2.67 | 5.58 | 11.5 | | 60. | .96 | 7.98 | 37.4 |
| 8. | 154. | 2.86 | 5.48 | 9.9 | 6.9: | 57. | .96 | 8.03 | 47.1 |
| 16. | 158. | 2.98 | 5.27 | 8.7 | 7.2: | 56. | .94 | 7.93 | 44.4 |
| 32. | 154. | 2.97 | 5.08 | 7.6 | 9.7: | 43. | .95 | 7.73 | 72.0 |
| 48. | 154. | 3.02 | 4.88 | 7.4 | 10.1: | 21. | .99 | 7.44 | 69.3 |

LEAST SQUARES FITTED DATA

| WEATHER : WEATHER : WEATHER : | | | | | | | | | |
|--|-------|--------|--------|-------|-------|--------|---------|---------|-------|
| WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | | | | | | | | | |
| HEIGHT (M) | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (DEG) |
| 1.0 | 2.39 | 5.98 | 14.4 | 4.0 | .92 | 8.31 | 33.6 | 41.7 | 1.93 |
| 2.0 | 2.51 | 5.93 | 12.7 | 4.7 | .93 | 8.28 | 38.0 | 38.5 | 2.07 |
| 4.0 | 2.63 | 5.82 | 11.2 | 5.6 | .94 | 8.22 | 42.9 | 35.6 | 2.22 |
| 8.0 | 2.75 | 5.62 | 9.9 | 6.6 | .95 | 8.11 | 48.4 | 32.8 | 2.37 |
| 16.0 | 2.88 | 5.29 | 8.8 | 7.8 | .96 | 7.92 | 54.7 | 30.3 | 2.54 |
| 32.0 | 3.02 | 4.93 | 7.8 | 9.2 | .97 | 7.64 | 61.7 | 28.0 | 2.73 |
| 48.0 | 3.10 | 4.94 | 7.2 | 10.2 | .97 | 7.48 | 66.3 | 26.7 | 2.84 |
| DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : | | | | | | | | | |
| 4.0 | .0408 | -.0413 | -.336 | -.09 | .0028 | -.0174 | -1.097 | -.03 | .0511 |
| 8.0 | .0214 | -.0338 | -1.005 | -.45 | .0014 | -.0149 | -3.688 | -.68 | .0274 |
| 16.0 | .0112 | -.0189 | -2.050 | -1.86 | .0007 | -.0059 | -9.586 | -12.84 | .0147 |
| 39.2* | .0031 | -.0025 | -1.511 | -1.88 | .0025 | -.0081 | -46.489 | -863.29 | .0081 |

* OBSERVED DATA

OBSERVED DATA

| | | | | | | | |
|----------------|-------------------|---------------|-------------------|----------------|-------------------|----------------|------------------|
| | : DATE 04/04/77 | TIME 12:00:00 | : DATE 04/04/77 | TIME 13:00:00 | : DATE 04/04/77 | TIME 14:00:00 | |
| | : WEATHER | : | : WEATHER | : | : WEATHER | : | |
| | : TEMP DEG C | 11.7 | : TEMP DEG C | 12.8 | : TEMP DEG C | 13.6 | |
| | : DEW POINT DEG C | -2.8 | : DEW POINT DEG C | -2.6 | : DEW POINT DEG C | -2.8 | |
| | : VISIBILITY (MI) | 85 | : VISIBILITY (MI) | 85 | : VISIBILITY (MI) | 85 | |
| CLD (TENTHS) | : LOW | 6 MID | HI | TOTL | 6:LOW | 3 MID | HI |
| CLD HT (M) | : LOW | 1525 | MID | HI | : LOW | 1525 | MID |
| EXPONENTS | : A = | -0.16 | B = | -0.20 | P = | -0.09 | |
| NET RADIATION | : A = | -0.16 | B = | -0.20 | P = | -0.09 | |
| RICHARDSON NO. | : (4M)- | 1.63 | (8M)- | 4.76 | (16M)- | 9.93 | |
| | : (39.192M) | -0.68 | (OBSERVED DATA): | (39.192M)***** | (OBSERVED DATA): | (39.192M)***** | (OBSERVED DATA): |
| (1/L)*10 | : (4M)- | 4.31 | (8M)- | 6.26 | (16M)- | 6.51 | |
| USTAR | : (4M). | 1545 | (8M). | 1629 | (16M). | 1647 | |
| | : WS | TEMP | SIGA | SIGE | : WS | TEMP | SIGA |
| HEIGHT (M) | : (DEG) | (M/S) | (C) | (DEG) | : (DEG) | (M/S) | (C) |
| 1. | : 292. | 1.37 | 10.37 | 59.8 | : 11.20 | 2.46 | 11.00 |
| 2. | : 290. | 1.49 | 9.66 | 54.6 | : 32.7 | 2.60 | 10.18 |
| 4. | : 286. | 1.50 | 9.73 | 47.6 | : 32.9 | 2.72 | 10.52 |
| 8. | : 298. | 1.50 | 9.53 | 42.0 | : 13.0: 344. | 2.99 | 10.35 |
| 16. | : 296. | 1.72 | 9.20 | 42.5 | : 12.5: 353. | 3.27 | 9.99 |
| 32. | : 292. | 1.96 | 8.97 | 33.2 | : 15.4: 353. | 3.30 | 9.75 |
| 48. | | | | | : 19.0: 353. | | |

LEAST SQUARES FITTED DATA

| | | | | | | | | | |
|--|-------|--------|--------|---------|-------|--------|--------|-------|--------|
| : WS TEMP SIGA SIGE : WS TEMP SIGA SIGE : WS TEMP SIGA SIGE : | | | | | | | | | |
| HEIGHT (M) | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (DEG) |
| 1.0 | 1.26 | 10.26 | 67.8 | 13.1 | 2.27 | 10.88 | 36.5 | 7.7 | 2.08 |
| 2.0 | 1.35 | 10.20 | 60.4 | 15.1 | 2.43 | 10.83 | 34.2 | 9.0 | 2.25 |
| 4.0 | 1.44 | 10.08 | 53.9 | 17.4 | 2.60 | 10.74 | 32.1 | 10.4 | 2.43 |
| 8.0 | 1.53 | 9.86 | 48.1 | 20.1 | 2.79 | 10.57 | 30.1 | 12.0 | 2.62 |
| 16.0 | 1.64 | 9.50 | 42.9 | 23.1 | 2.99 | 10.28 | 28.2 | 13.9 | 2.83 |
| 32.0 | 1.75 | 9.06 | 38.3 | 26.6 | 3.20 | 9.90 | 26.5 | 16.1 | 3.06 |
| 48.0 | 1.82 | 9.03 | 35.8 | 28.9 | 3.33 | 9.79 | 25.5 | 17.5 | 3.20 |
| : DU/DZ DTH/DZ RU*100 RI : DU/DZ DTH/DZ RU*100 RI : DU/DZ DTH/DZ RU*100 RI : | | | | | | | | | |
| 4.0 | .0314 | -.0465 | -1.246 | -.38 | .0596 | -.0338 | -.276 | -.08 | .0623 |
| 8.0 | .0168 | -.0387 | -3.645 | -2.96 | .0319 | -.0285 | -.811 | -.48 | .0336 |
| 16.0 | .0090 | -.0232 | -7.675 | -8.45 | .0171 | -.0179 | -1.775 | -2.12 | .0182 |
| 39.2* | .0150 | -.0044 | -6.983 | -109.40 | .0019 | -.0050 | -2.466 | -2.59 | -.0006 |
| * OBSERVED DATA | | | | | | | | | |

OBSERVED DATA

```

: DATE 04/04/77 TIME 15:00:00 :
: WEATHER :
: TEMP DEG C 13.9 :
: DEW POINT DEG C -2.6 :
: VISIBILITY (MI) 85 :
CLD (TENTHS) : LOW 3 MID HI TOTL 3:
CLD HT (M) : LOW 1525 MID HI :
EXPONENTS : A= -.10 B= .09 P= .11 :
NET RADIATION : 33.00 MW/CM2 :
RICHARDSON NO. : (4M) -.33 (8M) -.96 (16M) -2.19 :
: (39.192M) -.57 (OBSERVED DATA):
(1/L)*10 : (4M) -.91 (8M) -1.29 (16M) -1.44:
USTAR : (4M).1722 (8M).1761 (16M).1800:

```

```

: WD WS TEMP SIGA SIGE :
HEIGHT (M) : (DEG) (M/S) (C) (DEG) (DEG):
-----
1. : 12.66 :
2. : 346. 1.80 12.50 50.4 :
4. : 341. 2.03 11.79 46.5 :
8. : 332. 2.06 12.10 44.2 16.6:
16. : 336. 2.33 11.96 41.3 17.3:
32. : 334. 2.39 11.61 40.3 18.0:
48. : 340. 2.70 11.35 35.9 19.9:

```

LEAST SQUARES FITTED DATA

```

: WS TEMP SIGA SIGE :
HEIGHT (M) : (M/S) (C) (DEG) (DEG):
-----
1.0 : 1.68 12.39 53.7 13.6 :
2.0 : 1.81 12.35 50.3 14.4 :
4.0 : 1.96 12.28 47.1 15.4 :
8.0 : 2.13 12.14 44.1 16.4 :
16.0 : 2.30 11.89 41.3 17.5 :
32.0 : 2.49 11.54 38.6 18.6 :
48.0 : 2.61 11.38 37.2 19.3 :
-----
: DU/DZ DTH/DZ BU*100 RI :
-----
4.0 : .0520 -.0259 -.370 -.07 :
8.0 : .0281 -.0222 -1.081 -.74 :
16.0 : .0152 -.0148 -2.453 -4.38 :
39.2* : .0194 -.0062 -5.166 -63.21 :

```

* OBSERVED DATA

| | DATE 04/04/77 | TIME 16:00:00 | DATE 04/04/77 | TIME 17:00:00 | DATE 04/04/77 | TIME 18:00:00 |
|----------------|---------------|---------------|---------------|---------------|---------------|---------------|
| CLD (TENTHS) | | | | | | |
| CLD HT (M) | | | | | | |
| EXPONENTS | | | | | | |
| NET RADIATION | | | | | | |
| RICHARDSON NO. | | | | | | |
| (1/L)*10 | | | | | | |
| USTAR | | | | | | |

| HEIGHT (M) | WD :(DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|--------------|-------------|-------------|---------------|---------------|-------------|-------------|-------------|---------------|---------------|-------------|-------------|-------------|---------------|---------------|
| 1. | : | | 13.26 | | | : | | 13.31 | | | : | | 12.84 | | |
| 2. | : | 6. | 3.18 | 17.4 | | 13. | 3.08 | 13.16 | 14.4 | | : | 1.74 | 12.85 | 20.7 | |
| 4. | : | 2. | 3.43 | 12.00 | 17.2 | 10. | 3.34 | 12.15 | 13.6 | | : | 1.88 | 12.02 | 19.9 | |
| 8. | : | 355. | 3.69 | 12.32 | 17.2 | 8.4: | 1. | 3.60 | 12.60 | 13.0 | 7.0: | 2.01 | 12.61 | 20.1 | 8.6: |
| 16. | : | 0. | 3.92 | 12.24 | 16.3 | 8.7: | 6. | 3.88 | 12.57 | 12.1 | 7.3: | 2.09 | 12.61 | 20.6 | 9.2: |
| 32. | : | 358. | 3.98 | 11.95 | 16.4 | 10.4: | 6. | 4.17 | 12.23 | 12.1 | 9.1: | 2.21 | 12.36 | 21.4 | 12.1: |
| 48. | : | 359. | 4.14 | 11.66 | 17.1 | 12.3: | 8. | 4.23 | 12.01 | 11.2 | 9.4: | 2.18 | 12.10 | 19.6 | 13.7: |

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1.0 | 3.06 | 12.81 | 17.5 | 5.2 | 2.89 | 12.95 | 15.1 | 4.6 | 1.69 | 12.62 | 20.4 | 4.6 |
| 2.0 | 3.24 | 12.76 | 17.3 | 6.0 | 3.11 | 12.91 | 14.4 | 5.3 | 1.78 | 12.62 | 20.4 | 5.6 |
| 4.0 | 3.42 | 12.66 | 17.2 | 7.0 | 3.34 | 12.83 | 13.7 | 6.0 | 1.87 | 12.60 | 20.4 | 6.8 |
| 8.0 | 3.62 | 12.47 | 17.0 | 8.0 | 3.58 | 12.69 | 13.0 | 6.8 | 1.97 | 12.58 | 20.4 | 8.2 |
| 16.0 | 3.83 | 12.16 | 16.8 | 9.3 | 3.85 | 12.45 | 12.3 | 7.7 | 2.07 | 12.51 | 20.4 | 9.9 |
| 32.0 | 4.05 | 11.78 | 16.7 | 10.7 | 4.13 | 12.14 | 11.7 | 8.8 | 2.18 | 12.34 | 20.4 | 12.0 |
| 48.0 | 4.18 | 11.73 | 16.6 | 11.7 | 4.30 | 12.06 | 11.4 | 9.5 | 2.24 | 12.12 | 20.4 | 13.4 |
| | DU/DZ | DTM/DZ | BU*100 | RI | DU/DZ | DTM/DZ | BU*100 | RI | DU/DZ | DTM/DZ | BU*100 | RI |
| 4.0 | .0636 | -.0376 | -.176 | -.03 | .0791 | -.0266 | -.131 | -.01 | .0317 | .0033 | .051 | .00 |
| 8.0 | .0336 | -.0313 | -.524 | -.25 | .0425 | -.0221 | -.378 | -.21 | .0167 | .0022 | .126 | .00 |
| 16.0 | .0178 | -.0186 | -1.115 | -1.01 | .0228 | -.0131 | -.776 | -.86 | .0088 | .0002 | .033 | .00 |
| 39.2* | .0100 | -.0081 | -2.614 | -9.11 | .0038 | -.0037 | -1.123 | -1.00 | -.0019 | -.0062 | -6.832 | -18.79 |

A-170

OBSERVED DATA

| | DATE 04/04/77 | TIME 19:00:00 | DATE 04/04/77 | TIME 20:00:00 | DATE 04/04/77 | TIME 21:00:00 | |
|-----------------|---------------------------------|--------------------------------|---------------------------------|---------------|-----------------------|---------------|----|
| WEATHER | | | WEATHER | | WEATHER | | |
| TEMP DEG C | 11.7 | | TEMP DEG C | 7.8 | TEMP DEG C | 6.1 | |
| DEW POINT DEG C | -3.9 | | DEW POINT DEG C | -4.4 | DEW POINT DEG C | -3.3 | |
| VISIBILITY (MI) | 85 | | VISIBILITY (MI) | 30 | VISIBILITY (MI) | 20 | |
| CLD (TENTHS) | LOW 2 MID HI | TOTL | 2:LOW 2 MID HI | TOTL | 2:LOW 2 MID HI | TOTL | 2: |
| CLD HT (M) | LOW 1830 MID | HI | LOW 1830 MID | HI | LOW 1830 MID | HI | HI |
| EXPOSURE | A= .25 R= .41 P= -.07 | | A= -.19 R= .69 P= .07 | | A= -.36 R= .73 P= .30 | | |
| NET RADIATION | -9.19 MW/CM2 | | -7.95 MW/CM2 | | -7.61 MW/CM2 | | |
| RICHARDSON NO. | (4M)19.21 (8M)69.97(16M)***** | (4M) .24*(8M)31.34(16M)64.35 | (4M) .90 (8M) 1.95(16M) 2.88 | | | | |
| | (39.192M) 1.33 (OBSERVED DATA): | (39.192M) .08 (OBSERVED DATA): | (39.192M) 2.88 (OBSERVED DATA): | | | | |
| (1/L)*10 | (4M)***** (8M)***** (16M)***** | (4M) 2.7*(8M)***** (16M)***** | (4M)***** (16M)***** | | | | |
| USTAR | (4M).0000 (8M).0000 (16M).0000 | (4M).086* (8M).0016 (16M).0008 | (4M).0320 (8M).0207 (16M).0178 | | | | |
| HEIGHT (M) | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | | | | |
| | (DEG) (M/S) (C) (DEG) (DEG) | (DEG) (M/S) (C) (DEG) (DEG) | (DEG) (M/S) (C) (DEG) (DEG) | | | | |
| 1. | 10.12 | | 6.41 | | 4.55 | | |
| 2. | .82 10.77 22.0 | .236. | 1.41 6.86 9.5 | .163. | 1.02 5.03 11.6 | | |
| 4. | 1.03 10.60 23.5 | .237. | 2.00 7.06 7.4 | .169. | 1.74 5.63 8.9 | | |
| 8. | .85 11.72 28.1 | 6.4: 230. | 3.13 10.14 2.8 | 1.6: 169. | 2.90 9.00 7.2 | 1.0: | |
| 16. | .71 12.03 31.8 | 8.4: 242. | 3.00 11.44 2.5 | .9: 170. | 2.93 9.74 3.2 | 1.2: | |
| 32. | .65 11.98 53.1 | 9.5: 246. | 2.30 11.54 4.3 | 2.8: 164. | 2.96 9.84 3.6 | 2.2: | |
| 48. | .82 11.89 40.4 | 14.7: 250. | 1.71 11.43 6.3 | 4.9: 165. | 2.79 9.83 4.7 | 3.5: | |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WS | TEMP | SIGA | SIGE | WS | TEMP | SIGA | SIGE | WS | TEMP | SIGA | SIGE |
|------------|--------|--------|--------|-------|--------|--------|--------|-------|--------|--------|--------|-------|
| | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) |
| 1.0 | .96 | 10.47 | 17.4 | 2.6 | 1.83 | 6.65 | 7.6 | .3 | 1.10 | 5.01 | 13.9 | .2 |
| 2.0 | .91 | 10.59 | 20.7 | 3.5 | 1.92 | 7.02 | 6.7 | .4 | 1.35 | 5.39 | 10.8 | .3 |
| 4.0 | .87 | 10.82 | 24.6 | 4.7 | 2.02 | 7.72 | 5.9 | .7 | 1.66 | 6.10 | 8.4 | .5 |
| 8.0 | .82 | 11.24 | 29.3 | 6.2 | 2.12 | 8.97 | 5.1 | 1.1 | 2.04 | 7.38 | 6.5 | .9 |
| 16.0 | .78 | 11.88 | 34.9 | 8.3 | 2.23 | 10.91 | 4.5 | 1.8 | 2.51 | 9.36 | 5.1 | 1.4 |
| 32.0 | .74 | 12.35 | 41.4 | 11.1 | 2.34 | 12.52 | 4.0 | 2.9 | 3.09 | 10.96 | 3.9 | 2.3 |
| 48.0 | .72 | 11.75 | 45.9 | 13.1 | 2.41 | 11.08 | 3.7 | 3.8 | 3.49 | 9.42 | 3.4 | 3.1 |
| | DU/DZ | DTM/DZ | BU*100 | RI | DU/DZ | DTM/DZ | BU*100 | RI | DU/DZ | DTM/DZ | BU*100 | RI |
| 4.0 | -.0146 | .1188 | 8.762 | .00 | .0333 | .3356 | 4.586 | .00 | .1156 | .3430 | 6.977 | .00 |
| 8.0 | -.0069 | .0979 | 31.919 | .00 | .0175 | .2763 | 13.620 | .00 | .0711 | .2817 | 15.073 | .00 |
| 16.0 | -.0033 | .0562 | 80.852 | .00 | .0092 | .1576 | 27.964 | .00 | .0437 | .1589 | 22.323 | .00 |
| 39.2* | .0106 | .0044 | 43.773 | .00 | -.0369 | .0031 | 3.991 | .00 | -.0106 | .0094 | 5.997 | .00 |

* OBSERVED DATA

OBSERVED DATA

| | DATE 04/04/77 | TIME 22:00:00 | DATE 04/04/77 | TIME 23:00:00 | DATE 05/04/77 | TIME 00:00:00 |
|-----------------|---|---|---|-----------------|---------------------------|---------------|
| WEATHER | WEATHER | WEATHER | WEATHER | WEATHER | WEATHER | WEATHER |
| TEMP DEG C | 3.9 | 2.2 | 2.2 | TEMP DEG C | 3.4 | 3.4 |
| DEW POINT DEG C | -4.4 | -4.4 | -4.4 | DEW POINT DEG C | -3.9 | -3.9 |
| VISIBILITY (MI) | 20 | 20 | 20 | VISIBILITY (MI) | 20 | 20 |
| CLD (TENTHS) | LOW 2 MID HI | TOTL | 2:LOW 2 MID HI | TOTL | 2:LOW 2 MID HI | TOTL |
| CLD HT (M) | LOW 1830 MID HI | HI | LOW 1830 MID HI | HI | LOW 1830 MID HI | HI |
| EXPONENTS | A = -.03 B = .44 P = .29 | | A = -.11 B = -.44 P = .17 | | A = -.14 B = -.08 P = .22 | |
| NET RADIATION | -7.26 MW/CM2 | | -7.26 MW/CM2 | | -7.26 MW/CM2 | |
| RICHARDSON NO. | (4M) .67 (8M) 1.62 (16M) 3.37 | (4M) .12* (8M) .41* (16M) 6.52 | (4M) .22* (8M) .20* (16M) 5.29 | | | |
| (1/L)*10 | (39.192M)***** (OBSERVED DATA): | (39.192M) .34 (OBSERVED DATA): | (39.192M) .00 (OBSERVED DATA): | | | |
| USTAR | (4M)18.56 (8M)51.01 (16M)***** | (4M) .87* (8M) 3.59* (16M)***** | (4M) 2.29* (8M) 1.00* (16M)***** | | | |
| | (4M) .0350 (8M) .0213 (16M) .0136 | (4M) .120* (8M) .095* (16M) .0098 | (4M) .088* (8M) .116* (16M) .0116 | | | |
| HEIGHT (M) | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : | | | |
| 1. | 98. 1.13 2.46 | 104. 1.68 2.45 | 128. 1.49 .92 | | | |
| 2. | 98. 1.13 2.83 22.3 | 98. 2.20 2.73 6.6 | 128. 1.49 1.09 6.5 | | | |
| 4. | 94. 1.47 2.85 24.4 | 98. 3.09 3.81 4.5 | 119. 2.77 .80 5.3 | | | |
| 8. | 98. 1.93 4.00 24.7 | 98. 3.81 4.5 2.9 | 117. 2.77 1.54 3.5 | | | |
| 16. | 103. 2.39 5.25 20.5 | 108. 3.93 5.27 3.5 | 133. 4.52 3.50 2.8 | | | |
| 32. | 108. 2.70 6.43 22.3 | 119. 3.76 7.23 3.5 | 150. 2.88 7.82 4.0 | | | |
| 48. | 129. 2.78 7.60 21.2 | 123. 2.38 8.22 5.8 | 164. 2.88 7.94 4.4 | | | |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------|----------|------------|------------|----------|----------|------------|------------|
| 1.0 | .99 | 2.55 | 24.2 | 1.4 | 1.81 | 2.32 | 6.2 | 6.6 |
| 2.0 | 1.21 | 2.74 | 23.7 | 2.0 | 2.03 | 2.54 | 5.8 | 4.8 |
| 4.0 | 1.47 | 3.11 | 23.2 | 2.7 | 2.29 | 2.97 | 5.3 | 3.6 |
| 8.0 | 1.80 | 3.80 | 22.7 | 3.6 | 2.58 | 3.77 | 4.9 | 2.6 |
| 16.0 | 2.20 | 5.01 | 22.2 | 4.9 | 2.91 | 5.19 | 4.6 | 1.9 |
| 32.0 | 2.69 | 6.72 | 21.8 | 6.7 | 3.27 | 7.23 | 4.2 | 1.4 |
| 48.0 | 3.03 | 7.50 | 21.5 | 8.0 | 3.51 | 8.23 | 4.0 | 1.2 |
| | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI |
| 4.0 | .0993 | .1865 | 4.872 | .00 | .0910 | .2156 | 2.331 | .00 |
| 8.0 | .0607 | .1683 | 11.737 | .00 | .0512 | .1951 | 6.634 | .00 |
| 16.0 | .0371 | .1318 | 24.502 | .00 | .0288 | .1541 | 16.443 | .00 |
| 39.2* | .0050 | .0831 | 59.671 | .00 | -.0862 | .0719 | 39.079 | .00 |

* OBSERVED DATA

| | DATE 05/04/77 | TIME 01:00:00 | WEATHER | DATE 05/04/77 | TIME 02:00:00 | WEATHER | DATE 05/04/77 | TIME 03:00:00 |
|----------------|---------------|---------------|---------|---------------|---------------|---------|---------------|---------------|
| CLD (TENTHS) | | | | | | | | |
| CLD HT (M) | | | | | | | | |
| EXPONENTS | | | | | | | | |
| NET RADIATION | | | | | | | | |
| RICHARDSON NO. | | | | | | | | |
| (1/L)*10 | | | | | | | | |
| USTAR | | | | | | | | |

| HEIGHT (M) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|
| 1. | : | : | .00 | 5.6 | : | : | 1.29 | -.03 | 8.0 | : | : | 1.87 | -1.42 | : | : |
| 2. | : | 129. | .15 | 4.2 | : | 128. | 1.74 | -.10 | 6.4 | : | 89. | 2.36 | -1.29 | : | 6.7 |
| 4. | : | 119. | -.07 | 2.3 | : | 118. | 2.41 | -.53 | 4.4 | : | 82. | 2.89 | -1.47 | : | 6.1 |
| 8. | : | 116. | .70 | 1.8 | 1.7: | 116. | 3.60 | 1.49 | 2.7 | 2.4: | 86. | 3.24 | -.49 | 2.4: | 4.7 |
| 16. | : | 125. | 2.17 | 3.3 | .8: | 127. | 5.12 | 6.12 | 2.6 | 1.0: | 99. | 4.36 | .19 | 5.2 | 3.2: |
| 32. | : | 150. | 6.88 | 3.6 | 1.1: | 131. | 4.25 | 6.61 | 3.0 | .5: | 109. | 4.33 | 1.00 | 7.6 | 1.7: |
| 48. | : | 164. | 7.01 | 3.6 | 1.2: | 136. | | | | 1.0: | 133. | | 2.26 | 7.8 | 2.0: |

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1.0 | 1.27 | -53 | 4.6 | 1.7 | .99 | -46 | 9.7 | 6.9 | 1.59 | -1.44 | 5.4 | 4.1 |
| 2.0 | 1.57 | -26 | 4.2 | 1.6 | 1.33 | -26 | 7.6 | 4.5 | 1.92 | -1.33 | 5.6 | 3.5 |
| 4.0 | 1.93 | .25 | 3.8 | 1.4 | 1.79 | .15 | 5.9 | 2.9 | 2.32 | -1.13 | 5.9 | 3.1 |
| 8.0 | 2.37 | 1.23 | 3.4 | 1.3 | 2.41 | .94 | 4.6 | 1.9 | 2.80 | -.74 | 6.1 | 2.7 |
| 16.0 | 2.91 | 3.00 | 3.0 | 1.2 | 3.24 | 2.41 | 3.5 | 1.2 | 3.38 | -.00 | 6.4 | 2.4 |
| 32.0 | 3.58 | 5.73 | 2.7 | 1.1 | 4.37 | 4.97 | 2.8 | .8 | 4.08 | 1.24 | 6.7 | 2.1 |
| 48.0 | 4.04 | 7.41 | 2.6 | 1.0 | 5.19 | 7.01 | 2.4 | .6 | 4.55 | 2.18 | 6.9 | 1.9 |

| | DU/NZ | OTH/NZ | BU*100 | RI | DU/DZ | DTH/NZ | BU*100 | RI | DU/DZ | OTH/DZ | BU*100 | RI |
|-------|--------|--------|--------|-----|--------|--------|--------|-----|--------|--------|--------|-----|
| 4.0 | .1337 | .2592 | 4.004 | .00 | .1799 | .2088 | 3.726 | .00 | .1462 | .1097 | 1.177 | .00 |
| 8.0 | .0822 | .2386 | 9.717 | .00 | .1210 | .1985 | 7.810 | .00 | .0883 | .1039 | 3.056 | .00 |
| 16.0 | .0505 | .1974 | 21.137 | .00 | .0814 | .1781 | 15.402 | .00 | .0533 | .0922 | 7.427 | .00 |
| 39.2* | -.0113 | .0181 | 8.480 | .00 | -.0544 | .0406 | 9.783 | .00 | -.0019 | .0887 | 25.738 | .00 |

A-173

| | DATE | 05/04/77 | TIME | 04:00:00 | DATE | 05/04/77 | TIME | 05:00:00 | DATE | 05/04/77 | TIME | 06:00:00 | | | | | | | |
|----------------|------------|----------|-----------------|----------|------------|----------|-----------------|----------|------------|----------|-----------------|----------|-----------|-------|-----------------|-------|-----------|-------|-----|
| | WEATHER | | | | WEATHER | | | | WEATHER | | | | | | | | | | |
| | TEMP | DEG C | | | TEMP | DEG C | | | TEMP | DEG C | | | | | | | | | |
| | DEW | POINT | DEG C | | DEW | POINT | DEG C | | DEW | POINT | DEG C | | | | | | | | |
| | VISIBILITY | (MI) | 20 | | VISIBILITY | (MI) | 20 | | VISIBILITY | (MI) | 30 | | | | | | | | |
| CLD (TENTHS) | LOW | MID | HI | TOTAL | 0 | LOW | MID | HI | TOTAL | 0 | LOW | MID | HI | TOTAL | | | | | |
| CLD HT (M) | LOW | MID | HI | | LOW | MID | HI | | LOW | MID | HI | | | | | | | | |
| EXPONENTS | A | = | -38 | B | = | -76 | P | = | .44 | A | = | -38 | B | = | -76 | P | = | .44 | |
| NET RADIATION | | | | | | | | | | | | | | | | | | | |
| RICHARDSON NO. | (4M) | .09 | (8M) | .21 | (16M) | .49 | (4M) | .05 | (8M) | .13 | (16M) | .36 | (4M) | .05 | (8M) | .16 | (16M) | .54 | |
| (1/L)*10 | (39.192M) | ***** | (OBSERVED DATA) | : | (39.192M) | ***** | (OBSERVED DATA) | : | (39.192M) | ***** | (OBSERVED DATA) | : | (39.192M) | ***** | (OBSERVED DATA) | : | (39.192M) | ***** | |
| USTAR | (4M) | .57 | (8M) | 1.11 | (16M) | 2.56 | (4M) | .23 | (8M) | .47 | (16M) | 1.42 | (4M) | .25 | (8M) | .71 | (16M) | 3.03 | |
| | (4M) | .1270 | (8M) | .1214 | (16M) | 1.045 | (4M) | .1203 | (8M) | .1265 | (16M) | 1.143 | (4M) | .2140 | (8M) | .1826 | (16M) | 1.225 | |
| HEIGHT (M) | WD | WS | TEMP | SIGA | DEG | SIGA | DEG | WD | WS | TEMP | SIGA | DEG | WD | WS | TEMP | SIGA | DEG | SIGA | DEG |
| 1. | 121. | 1.66 | -72 | -71 | 10.4 | | | 142. | 1.34 | -1.00 | -1.11 | 10.7 | | | 128. | 2.62 | 1.55 | 7.1 | |
| 2. | 113. | 2.10 | -96 | -96 | 9.2 | | | 133. | 1.93 | -1.11 | -1.11 | 10.7 | | | 118. | 3.24 | .19 | 5.8 | |
| 4. | 110. | 2.72 | -40 | -40 | 6.8 | | | 129. | 2.52 | -24 | -24 | 6.2 | | | 115. | 4.06 | .00 | 4.3 | |
| 8. | 115. | 4.18 | .54 | .54 | 4.3 | | | 132. | 3.40 | .22 | .22 | 4.2 | | | 120. | 5.35 | .59 | 2.6 | |
| 16. | 120. | 5.97 | 3.58 | 3.58 | 2.7 | | | 128. | 5.31 | 1.82 | 1.82 | 1.9 | | | 124. | 6.29 | 1.29 | 2.9 | |
| 32. | 137. | 6.02 | 5.40 | 5.40 | 4.4 | | | 134. | 6.93 | 5.14 | 5.14 | 2.1 | | | 137. | 6.26 | 3.84 | 1.7 | |

| HEIGHT (M) : | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|--------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| 1.0 : | 1.18 | -1.03 | 14.0 | 18.7 : | .92 | -99 | 18.0 | 6.9 : | 2.1 | .44 | 9.9 | 52.2 : |
| 2.0 : | 1.60 | -91 | 10.7 | 11.1 : | 1.31 | -95 | 12.1 | 4.5 : | 2.68 | .50 | 7.4 | 21.4 : |
| 4.0 : | 2.17 | -67 | 8.2 | 6.5 : | 1.85 | -84 | 8.1 | 3.0 : | 3.29 | .62 | 5.5 | 8.8 : |
| 8.0 : | 2.94 | -18 | 6.3 | 3.9 : | 2.63 | -59 | 5.4 | 2.0 : | 4.03 | .90 | 4.1 | 3.6 : |
| 16.0 : | 3.99 | 85 | 4.9 | 2.3 : | 3.73 | .08 | 3.6 | 1.3 : | 4.94 | 1.55 | 3.1 | 1.5 : |
| 32.0 : | 5.42 | 3.09 | 3.7 | 1.4 : | 5.29 | 2.10 | 2.4 | .9 : | 6.05 | 3.22 | 2.3 | .6 : |
| 48.0 : | 6.48 | 5.57 | 3.2 | 1.0 : | 6.48 | 5.04 | 1.9 | .7 : | 6.82 | 5.39 | 1.9 | .4 : |
| ----- | | | | | | | | | | | | |
| : | DU/DZ | DTH/DZ | BU*100 | RI : | DU/DZ | DTH/DZ | BU*100 | RI : | DU/DZ | DTH/DZ | BU*100 | RI : |
| ----- | | | | | | | | | | | | |
| 4.0 : | .2242 | .1323 | 1.623 | .00 : | .2203 | .0689 | 1.154 | .00 : | .2244 | .0773 | .409 | .00 : |
| 8.0 : | .1522 | .1369 | 3.639 | .00 : | .1562 | .0867 | 2.885 | .00 : | .1375 | .0871 | 1.226 | .00 : |
| 16.0 : | .1033 | .1463 | 8.405 | .00 : | .1107 | .1223 | 8.076 | .00 : | .0842 | .1067 | 3.991 | .00 : |
| 39.2* | .0031 | .1237 | 18.688 | .00 : | .1012 | .2175 | 32.478 | .00 : | -.0019 | .0925 | 12.732 | .00 : |

A-174

OBSERVED DATA

DATE 05/04/77 TIME 07:00:00 : DATE 05/04/77 TIME 08:00:00 : DATE 05/04/77 TIME 09:00:00 :
 WEATHER : WEATHER : WEATHER :
 TEMP DEG C 1.0 : TEMP DEG C 4.5 : TEMP DEG C 10.1 :
 DEW POINT DEG C -3.3 : DEW POINT DEG C -2.8 : DEW POINT DEG C -0.3 :
 VISIBILITY (MI) 85 : VISIBILITY (MI) 85 : VISIBILITY (MI) 85 :
 CLD (TENTHS) : LOW MID 1 HI TOTAL 0 : LOW MID 1 HI TOTAL 1 :
 CLD HT (M) : LOW MID 2135 HI : LOW MID 2440 HI :
 EXPCENTS : A= -.20 B= -.45 P= .29 : A= -.13 B= .07 P= .12 : A= -.20 B= .13 P= .09 :
 NET RADIATION : 1.04 MW/CM2 : 12.70 MW/CM2 : 24.98 MW/CM2 :
 RICHARDSON NO.: (4M) -.02 (8M) -.01(16M) .14 : (4M) -.17 (8M) -.46(16M) -.85 : (4M) -.38 (8M)-1.11(16M)-2.27 :
 (1/L)*10 : (39.192M) .27 (OBSERVED DATA): (39.192M) .11 (OBSERVED DATA): (39.192M)-4.53 (OBSERVED DATA):
 USTAR : (4M) -.05 (8M) -.02 (16M) .26 : (4M) -.47 (8M) -.63 (16M) -.57 : (4M)-1.04 (8M)-1.48 (16M)-1.50 :
 (4M).2099 (8M).2217 (16M).1792 : (4M).2537 (8M).2538 (16M).2517 : (4M).3007 (8M).3031 (16M).3008 :

HEIGHT (M) : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE :
 : (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) :
 1. : 130. : 2.38 : 1.72 : 8.4 : 1.66 : 6.97 : 2.72 : 6.92 : 8.6 : 140. : 3.05 : 10.57 : 11.7 :
 2. : 121. : 2.76 : 1.52 : 7.7 : 1.44. : 3.10 : 6.51 : 8.4 : 135. : 3.45 : 9.96 : 10.2 :
 4. : 119. : 3.16 : 1.63 : 6.1 : 4.5 : 3.44 : 6.50 : 7.4 : 5.6 : 3.74 : 9.93 : 8.5 : 6.3 :
 8. : 126. : 3.70 : 1.49 : 5.9 : 4.1 : 3.60 : 6.27 : 6.3 : 6.1 : 3.90 : 9.66 : 6.4 : 6.7 :
 16. : 127. : 4.78 : 1.63 : 4.8 : 3.1 : 3.72 : 6.07 : 6.3 : 6.4 : 4.04 : 9.38 : 6.4 : 7.7 :
 32. : 136. : 6.30 : 2.56 : 4.5 : 1.9 : 4.12 : 5.94 : 5.9 : 6.3 : 4.11 : 9.18 : 6.6 : 7.8 :
 48. : 136. : 6.30 : 2.56 : 4.5 : 1.9 : 4.12 : 5.94 : 5.9 : 6.3 : 4.11 : 9.18 : 6.6 : 7.8 :

LEAST SQUARES FITTED DATA

HEIGHT (M) : WS TEMP SIGA SIGE : WS TEMP SIGA SIGE : WS TEMP SIGA SIGE :
 : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) :
 1.0 : 1.83 : 1.71 : 9.8 : 12.6 : 2.59 : 6.86 : 9.6 : 4.9 : 2.99 : 10.51 : 13.0 : 4.8 :
 2.0 : 2.24 : 1.67 : 8.5 : 9.3 : 2.81 : 6.81 : 8.8 : 5.2 : 3.18 : 10.44 : 11.3 : 5.3 :
 4.0 : 2.73 : 1.62 : 7.4 : 6.8 : 3.05 : 6.72 : 8.0 : 5.4 : 3.38 : 10.31 : 9.8 : 5.7 :
 8.0 : 3.34 : 1.52 : 6.4 : 5.0 : 3.30 : 6.56 : 7.3 : 5.7 : 3.60 : 10.07 : 8.6 : 6.3 :
 16.0 : 4.07 : 1.45 : 5.6 : 3.7 : 3.58 : 6.29 : 6.7 : 6.0 : 3.83 : 9.66 : 7.4 : 6.9 :
 32.0 : 4.97 : 1.71 : 4.9 : 2.7 : 3.88 : 5.98 : 6.1 : 6.3 : 4.07 : 9.22 : 6.5 : 7.5 :
 48.0 : 5.59 : 2.53 : 4.5 : 2.2 : 4.07 : 5.98 : 5.8 : 6.4 : 4.22 : 9.25 : 6.0 : 7.9 :
 DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI :
 4.0 : .1831 -.0150 -.114 -.02 : .0821 -.0322 -.194 -.03 : .0696 -.0531 -.256 -.07 :
 8.0 : .1118 -.0041 -.084 -.01 : .0445 -.0261 -.537 -.23 : .0370 -.0438 -.749 -.27 :
 16.0 : .0682 .0177 .976 .00 : .0241 -.0141 -.988 -1.17 : .0197 -.0253 -1.531 -1.77 :
 39.2* : .0950 .0681 12.484 .00 : .0250 .0019 .665 .00 : .0044 -.0025 -.804 -.81 :

* OBSERVED DATA

OBSERVED DATA

| : DATE 05/04/77 TIME 10:00:00 : DATE 05/04/77 TIME 11:00:00 : DATE 05/04/77 TIME 12:00:00 : | | | | | | | | | |
|---|---|-----------------------------------|---|-----------------------------------|---|-----------------------------------|---|-----------------------------------|---|
| WEATHER : | | WEATHER : | | WEATHER : | | WEATHER : | | WEATHER : | |
| TEMP DEG C | 13.9 | TEMP DEG C | 15.7 | TEMP DEG C | 16.7 | TEMP DEG C | 16.7 | TEMP DEG C | 16.7 |
| DEW POINT DEG C | -0.7 | DEW POINT DEG C | -1.0 | DEW POINT DEG C | -1.0 | DEW POINT DEG C | -1.0 | DEW POINT DEG C | -1.0 |
| VISIBILITY (MI) | 85 | VISIBILITY (MI) | 85 | VISIBILITY (MI) | 85 | VISIBILITY (MI) | 85 | VISIBILITY (MI) | 85 |
| CLD (TENTHS) | LOW | CLD (TENTHS) | LOW | CLD (TENTHS) | LOW | CLD (TENTHS) | LOW | CLD (TENTHS) | LOW |
| CLD HT (M) | LOW | CLD HT (M) | LOW | CLD HT (M) | LOW | CLD HT (M) | LOW | CLD HT (M) | LOW |
| EXPONENTS | A = -.19 B = .23 P = .07 | EXPONENTS | A = .01 B = .27 P = .09 | EXPONENTS | A = -.22 B = -.06 P = .07 | EXPONENTS | A = -.22 B = -.06 P = .07 | EXPONENTS | A = -.22 B = -.06 P = .07 |
| NET RADIATION : | 35.87 MW/CM2 | NET RADIATION : | 41.73 MW/CM2 | NET RADIATION : | 44.24 MW/CM2 | NET RADIATION : | 44.24 MW/CM2 | NET RADIATION : | 44.24 MW/CM2 |
| RICHARDSON NO. | (4M) -.82 (8M) -2.48 (16M) -5.30 | RICHARDSON NO. | (4M) -1.31 (8M) -3.82 (16M) -7.78 | RICHARDSON NO. | (4M) -1.58 (8M) -4.89 (16M) -11.4 | RICHARDSON NO. | (4M) -1.58 (8M) -4.89 (16M) -11.4 | RICHARDSON NO. | (4M) -1.58 (8M) -4.89 (16M) -11.4 |
| (1/L)*10 | (39.192M) -1.51 (OBSERVED DATA) : | (39.192M) -1.51 (OBSERVED DATA) : | (39.192M) -1.51 (OBSERVED DATA) : | (39.192M) -1.51 (OBSERVED DATA) : | (39.192M) -1.51 (OBSERVED DATA) : | (39.192M) -1.51 (OBSERVED DATA) : | (39.192M) -1.51 (OBSERVED DATA) : | (39.192M) -1.51 (OBSERVED DATA) : | (39.192M) -1.51 (OBSERVED DATA) : |
| USTAR | (4M) -2.20 (8M) -3.27 (16M) -3.48 | USTAR | (4M) -3.48 (8M) -5.03 (16M) -5.10 | USTAR | (4M) -4.20 (8M) -6.42 (16M) -7.48 | USTAR | (4M) -4.20 (8M) -6.42 (16M) -7.48 | USTAR | (4M) -4.20 (8M) -6.42 (16M) -7.48 |
| | (4M) .3086 (8M) .3150 (16M) .3123 | | (4M) .1857 (8M) .1936 (16M) .1934 | | (4M) .2201 (8M) .2301 (16M) .2337 | | (4M) .2201 (8M) .2301 (16M) .2337 | | (4M) .2201 (8M) .2301 (16M) .2337 |
| HEIGHT (M) | WS TEMP SIGA SIGE : WD TEMP SIGA SIGE : WS TEMP SIGA SIGE : | HEIGHT (M) | WS TEMP SIGA SIGE : WD TEMP SIGA SIGE : WS TEMP SIGA SIGE : | HEIGHT (M) | WS TEMP SIGA SIGE : WD TEMP SIGA SIGE : WS TEMP SIGA SIGE : | HEIGHT (M) | WS TEMP SIGA SIGE : WD TEMP SIGA SIGE : WS TEMP SIGA SIGE : | HEIGHT (M) | WS TEMP SIGA SIGE : WD TEMP SIGA SIGE : |
| 1. | 160. 2.96 12.97 15.7 | 1. | 160. 2.96 12.97 15.7 | 1. | 160. 2.96 12.97 15.7 | 1. | 160. 2.96 12.97 15.7 | 1. | 160. 2.96 12.97 15.7 |
| 2. | 156. 3.21 12.29 14.0 | 2. | 156. 3.21 12.29 14.0 | 2. | 156. 3.21 12.29 14.0 | 2. | 156. 3.21 12.29 14.0 | 2. | 156. 3.21 12.29 14.0 |
| 4. | 153. 3.45 12.25 12.9 | 4. | 153. 3.45 12.25 12.9 | 4. | 153. 3.45 12.25 12.9 | 4. | 153. 3.45 12.25 12.9 | 4. | 153. 3.45 12.25 12.9 |
| 8. | 157. 3.53 12.00 11.9 | 8. | 157. 3.53 12.00 11.9 | 8. | 157. 3.53 12.00 11.9 | 8. | 157. 3.53 12.00 11.9 | 8. | 157. 3.53 12.00 11.9 |
| 16. | 154. 3.59 11.68 9.2 | 16. | 154. 3.59 11.68 9.2 | 16. | 154. 3.59 11.68 9.2 | 16. | 154. 3.59 11.68 9.2 | 16. | 154. 3.59 11.68 9.2 |
| 32. | 154. 3.75 11.45 8.6 | 32. | 154. 3.75 11.45 8.6 | 32. | 154. 3.75 11.45 8.6 | 32. | 154. 3.75 11.45 8.6 | 32. | 154. 3.75 11.45 8.6 |
| 48. | 154. 3.75 11.45 8.6 | 48. | 154. 3.75 11.45 8.6 | 48. | 154. 3.75 11.45 8.6 | 48. | 154. 3.75 11.45 8.6 | 48. | 154. 3.75 11.45 8.6 |

LEAST SQUARES FITTED DATA

| : DATE 05/04/77 TIME 10:00:00 : DATE 05/04/77 TIME 11:00:00 : DATE 05/04/77 TIME 12:00:00 : | | | | | | | | | |
|---|---|-----------------------------------|---|-----------------------------------|---|-----------------------------------|---|-----------------------------------|---|
| WEATHER : | | WEATHER : | | WEATHER : | | WEATHER : | | WEATHER : | |
| TEMP DEG C | 13.9 | TEMP DEG C | 15.7 | TEMP DEG C | 16.7 | TEMP DEG C | 16.7 | TEMP DEG C | 16.7 |
| DEW POINT DEG C | -0.7 | DEW POINT DEG C | -1.0 | DEW POINT DEG C | -1.0 | DEW POINT DEG C | -1.0 | DEW POINT DEG C | -1.0 |
| VISIBILITY (MI) | 85 | VISIBILITY (MI) | 85 | VISIBILITY (MI) | 85 | VISIBILITY (MI) | 85 | VISIBILITY (MI) | 85 |
| CLD (TENTHS) | LOW | CLD (TENTHS) | LOW | CLD (TENTHS) | LOW | CLD (TENTHS) | LOW | CLD (TENTHS) | LOW |
| CLD HT (M) | LOW | CLD HT (M) | LOW | CLD HT (M) | LOW | CLD HT (M) | LOW | CLD HT (M) | LOW |
| EXPONENTS | A = -.19 B = .23 P = .07 | EXPONENTS | A = .01 B = .27 P = .09 | EXPONENTS | A = -.22 B = -.06 P = .07 | EXPONENTS | A = -.22 B = -.06 P = .07 | EXPONENTS | A = -.22 B = -.06 P = .07 |
| NET RADIATION : | 35.87 MW/CM2 | NET RADIATION : | 41.73 MW/CM2 | NET RADIATION : | 44.24 MW/CM2 | NET RADIATION : | 44.24 MW/CM2 | NET RADIATION : | 44.24 MW/CM2 |
| RICHARDSON NO. | (4M) -.82 (8M) -2.48 (16M) -5.30 | RICHARDSON NO. | (4M) -1.31 (8M) -3.82 (16M) -7.78 | RICHARDSON NO. | (4M) -1.58 (8M) -4.89 (16M) -11.4 | RICHARDSON NO. | (4M) -1.58 (8M) -4.89 (16M) -11.4 | RICHARDSON NO. | (4M) -1.58 (8M) -4.89 (16M) -11.4 |
| (1/L)*10 | (39.192M) -1.51 (OBSERVED DATA) : | (39.192M) -1.51 (OBSERVED DATA) : | (39.192M) -1.51 (OBSERVED DATA) : | (39.192M) -1.51 (OBSERVED DATA) : | (39.192M) -1.51 (OBSERVED DATA) : | (39.192M) -1.51 (OBSERVED DATA) : | (39.192M) -1.51 (OBSERVED DATA) : | (39.192M) -1.51 (OBSERVED DATA) : | (39.192M) -1.51 (OBSERVED DATA) : |
| USTAR | (4M) -2.20 (8M) -3.27 (16M) -3.48 | USTAR | (4M) -3.48 (8M) -5.03 (16M) -5.10 | USTAR | (4M) -4.20 (8M) -6.42 (16M) -7.48 | USTAR | (4M) -4.20 (8M) -6.42 (16M) -7.48 | USTAR | (4M) -4.20 (8M) -6.42 (16M) -7.48 |
| | (4M) .3086 (8M) .3150 (16M) .3123 | | (4M) .1857 (8M) .1936 (16M) .1934 | | (4M) .2201 (8M) .2301 (16M) .2337 | | (4M) .2201 (8M) .2301 (16M) .2337 | | (4M) .2201 (8M) .2301 (16M) .2337 |
| HEIGHT (M) | WS TEMP SIGA SIGE : WD TEMP SIGA SIGE : WS TEMP SIGA SIGE : | HEIGHT (M) | WS TEMP SIGA SIGE : WD TEMP SIGA SIGE : WS TEMP SIGA SIGE : | HEIGHT (M) | WS TEMP SIGA SIGE : WD TEMP SIGA SIGE : WS TEMP SIGA SIGE : | HEIGHT (M) | WS TEMP SIGA SIGE : WD TEMP SIGA SIGE : WS TEMP SIGA SIGE : | HEIGHT (M) | WS TEMP SIGA SIGE : WD TEMP SIGA SIGE : |
| 1.0 | 2.90 12.92 18.5 4.3 | 1.0 | 2.90 12.92 18.5 4.3 | 1.0 | 2.90 12.92 18.5 4.3 | 1.0 | 2.90 12.92 18.5 4.3 | 1.0 | 2.90 12.92 18.5 4.3 |
| 2.0 | 3.04 12.84 16.2 5.0 | 2.0 | 3.04 12.84 16.2 5.0 | 2.0 | 3.04 12.84 16.2 5.0 | 2.0 | 3.04 12.84 16.2 5.0 | 2.0 | 3.04 12.84 16.2 5.0 |
| 4.0 | 3.18 12.70 14.2 5.9 | 4.0 | 3.18 12.70 14.2 5.9 | 4.0 | 3.18 12.70 14.2 5.9 | 4.0 | 3.18 12.70 14.2 5.9 | 4.0 | 3.18 12.70 14.2 5.9 |
| 8.0 | 3.34 12.43 12.5 6.9 | 8.0 | 3.34 12.43 12.5 6.9 | 8.0 | 3.34 12.43 12.5 6.9 | 8.0 | 3.34 12.43 12.5 6.9 | 8.0 | 3.34 12.43 12.5 6.9 |
| 16.0 | 3.50 11.99 10.9 8.1 | 16.0 | 3.50 11.99 10.9 8.1 | 16.0 | 3.50 11.99 10.9 8.1 | 16.0 | 3.50 11.99 10.9 8.1 | 16.0 | 3.50 11.99 10.9 8.1 |
| 32.0 | 3.66 11.50 9.6 9.6 | 32.0 | 3.66 11.50 9.6 9.6 | 32.0 | 3.66 11.50 9.6 9.6 | 32.0 | 3.66 11.50 9.6 9.6 | 32.0 | 3.66 11.50 9.6 9.6 |
| 48.0 | 3.77 11.53 8.9 10.5 | 48.0 | 3.77 11.53 8.9 10.5 | 48.0 | 3.77 11.53 8.9 10.5 | 48.0 | 3.77 11.53 8.9 10.5 | 48.0 | 3.77 11.53 8.9 10.5 |
| DU/DZ DTH/DZ BU*100 RI : | | DU/DZ DTH/DZ BU*100 RI : | | DU/DZ DTH/DZ BU*100 RI : | | DU/DZ DTH/DZ BU*100 RI : | | DU/DZ DTH/DZ BU*100 RI : | |
| 4.0 | .0498 -.0594 -.322 -.07 | 4.0 | .0498 -.0594 -.322 -.07 | 4.0 | .0498 -.0594 -.322 -.07 | 4.0 | .0498 -.0594 -.322 -.07 | 4.0 | .0498 -.0594 -.322 -.07 |
| 8.0 | .0261 -.0492 -.971 -.43 | 8.0 | .0261 -.0492 -.971 -.43 | 8.0 | .0261 -.0492 -.971 -.43 | 8.0 | .0261 -.0492 -.971 -.43 | 8.0 | .0261 -.0492 -.971 -.43 |
| 16.0 | .0137 -.0289 -2.076 -1.91 | 16.0 | .0137 -.0289 -2.076 -1.91 | 16.0 | .0137 -.0289 -2.076 -1.91 | 16.0 | .0137 -.0289 -2.076 -1.91 | 16.0 | .0137 -.0289 -2.076 -1.91 |
| 39.2* | .0100 -.0044 -1.725 -5.18 | 39.2* | .0100 -.0044 -1.725 -5.18 | 39.2* | .0100 -.0044 -1.725 -5.18 | 39.2* | .0100 -.0044 -1.725 -5.18 | 39.2* | .0100 -.0044 -1.725 -5.18 |

* OBSERVED DATA

OBSERVED DATA

| | | DATE 05/04/77 | | TIME 13:00:00 | | DATE 05/04/77 | | TIME 14:00:00 | | DATE 05/04/77 | | TIME 15:00:00 | |
|----------------|-----------|-----------------------|-------------|----------------------|-----------|----------------------|-------------|----------------------|-----------|-----------------|-------------|-----------------|-------|
| | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | |
| | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | | TEMP DEG C | |
| | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | | DEW POINT DEG C | |
| | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | | VISIBILITY (MI) | |
| CLD (TENTHS) | LOW | 2 MID | HI | TOTAL | 2:LOW | 3 MID | HI | TOTAL | 3:LOW | 3 MID | HI | TOTAL | 3: |
| CLO HT (M) | LOW | 1525 MID | HI | | LOW | 1980 MID | HI | | LOW | 1830 MID | HI | | |
| EXPONENTS | A = | .01 B = | -.00 P = | .08 | A = | -.11 B = | .35 P = | .01 | A = | -.02 B = | .29 P = | .11 | |
| NET RADIATION | | 43.89 MW/CM2 | | | | 36.63 MW/CM2 | | | | 30.84 MW/CM2 | | | |
| RICHARDSON NO. | (4M) | -.47 (8M) | -1.38 (16M) | -2.88 | (4M) | -48.6 (8M) | -150. (16M) | -363. | (4M) | -.39 (8M) | -1.12 (16M) | -2.35 | |
| | (39.192M) | 10.88 (OBSERVED DATA) | (39.192M) | 1.09 (OBSERVED DATA) | (39.192M) | 1.09 (OBSERVED DATA) | (39.192M) | -.32 (OBSERVED DATA) | (39.192M) | 1.05 (8M) | -1.49 (16M) | -1.55 | |
| (1/L)*10 | (4M) | -1.28 (8M) | -1.84 (16M) | -1.90 | (4M) | -121. (8M) | -196 (16M) | -238. | (4M) | -1.05 (8M) | -1.49 (16M) | -1.55 | |
| USTAR | (4M) | .2172 (8M) | .2199 (16M) | .2185 | (4M) | .6628 (8M) | .9255 (16M) | 1.0654 | (4M) | .2248 (8M) | .2291 (16M) | .2309 | |
| | | WD | | WS | | WD | | WS | | WD | | WS | |
| HEIGHT (M) | (DEG) | (M/S) | (C) | SIGA | (DEG) | (M/S) | (C) | SIGA | (DEG) | (M/S) | (C) | SIGA | (DEG) |
| 1. | 288. | 2.25 | 16.14 | 55.4 | 305. | 1.57 | 16.23 | 48.0 | 334. | 2.33 | 17.46 | 27.1 | |
| 2. | 288. | 2.42 | 15.31 | 51.7 | 303. | 1.71 | 15.57 | 44.2 | 329. | 2.56 | 16.66 | 24.3 | |
| 4. | 275. | 2.55 | 15.60 | 59.3 | 22.8 | 294. | 1.78 | 15.83 | 40.1 | 14.8 | 16.87 | 22.3 | 12.0 |
| 8. | 354. | 2.58 | 15.51 | 53.7 | 19.4 | 298. | 1.77 | 15.72 | 36.3 | 16.5 | 16.68 | 27.7 | 15.7 |
| 16. | 284. | 2.97 | 15.09 | 57.6 | 19.4 | 282. | 1.61 | 15.44 | 36.2 | 23.1 | 16.30 | 25.3 | 16.1 |
| 32. | 283. | 2.92 | 14.98 | 54.2 | 23.4 | 291. | 1.71 | 15.30 | 34.0 | 27.1 | 16.08 | 22.4 | 22.0 |
| 48. | | | | | | | | | | | | | |

LEAST SQUARES FITTED DATA

| | | WD | | WS | | WD | | WS | | WD | | WS | |
|------------|--------|--------|--------|--------|-------|--------|--------|--------|-------|--------|--------|--------|-------|
| HEIGHT (M) | (M/S) | (C) | SIGA | (DEG) | (M/S) | (C) | SIGA | (DEG) | (M/S) | (C) | SIGA | (DEG) | (M/S) |
| 1.0 | 2.13 | 15.94 | 54.4 | 21.3 | 1.65 | 16.12 | 50.9 | 6.8 | 2.18 | 17.34 | 26.2 | 6.6 | |
| 2.0 | 2.26 | 15.90 | 54.7 | 21.3 | 1.66 | 16.08 | 47.3 | 8.7 | 2.35 | 17.29 | 25.8 | 8.1 | |
| 4.0 | 2.39 | 15.81 | 54.9 | 21.2 | 1.67 | 16.01 | 43.9 | 11.0 | 2.53 | 17.17 | 25.4 | 9.9 | |
| 8.0 | 2.54 | 15.66 | 55.2 | 21.2 | 1.68 | 15.87 | 40.8 | 14.1 | 2.72 | 16.96 | 24.9 | 12.1 | |
| 16.0 | 2.69 | 15.39 | 55.4 | 21.2 | 1.70 | 15.65 | 37.9 | 17.9 | 2.92 | 16.61 | 24.5 | 14.9 | |
| 32.0 | 2.85 | 15.06 | 55.6 | 21.2 | 1.71 | 15.38 | 35.2 | 22.9 | 3.15 | 16.19 | 24.1 | 18.2 | |
| 48.0 | 2.95 | 15.00 | 55.8 | 21.1 | 1.72 | 15.33 | 33.7 | 26.4 | 3.28 | 16.13 | 23.9 | 20.5 | |
| | | DU/DZ | | DTH/DZ | | DU/DZ | | DTH/DZ | | DU/DZ | | DTH/DZ | |
| | | | BU*100 | RI | | | BU*100 | RI | | | BU*100 | RI | |
| 4.0 | .0470 | -.0306 | -.290 | -.05 | .0041 | -.0241 | -.467 | -.02 | .0618 | -.0436 | -.369 | -.10 | |
| 8.0 | .0249 | -.0253 | -.855 | -.42 | .0021 | -.0196 | -1.501 | -.14 | .0332 | -.0365 | -1.067 | -.56 | |
| 16.0 | .0132 | -.0148 | -1.778 | -2.08 | .0010 | -.0107 | -3.233 | -1.50 | .0179 | -.0222 | -2.250 | -3.67 | |
| 39.2* | -.0031 | .0031 | 1.879 | .00 | .0062 | .0013 | 2.381 | .00 | .0200 | -.0038 | -1.912 | -9.83 | |

* OBSERVED DATA

OBSERVED DATA

```

: DATE 05/04/77 TIME 16:00:00 : DATE 05/04/77 TIME 17:00:00 : DATE 05/04/77 TIME 18:00:00 :
: WEATHER : WEATHER : WEATHER :
: TEMP DEG C 19.1 : TEMP DEG C 19.1 : TEMP DEG C 18.4 :
: DEW POINT DEG C -2.1 : DEW POINT DEG C -2.8 : DEW POINT DEG C -3.3 :
: VISIBILITY (MI) 85 : VISIBILITY (MI) 85 : VISIBILITY (MI) 85 :
: CLD (TENTHS) :LOW 2 MID HI TOTAL 2:LOW 2 MID HI TOTAL 2:LOW 2 MID HI TOTAL 2:
: CLD HT (M) :LOW 1830 MID HI TOTAL 2:LOW 2 MID HI TOTAL 2:LOW 2 MID HI TOTAL 2:
: EXPCENTS : A= -.07 B= .27 P= .09 : A= -.08 B= .27 P= .03 : A= -.10 B= .12 P= .09 :
: NET RADIATION : 10.89 MW/CM2 : 9.00 MW/CM2 : -7.26 MW/CM2 :
: RICHARDSON NO.: (4M) -.09 (8M) -.28(16M) -.59 : (4M) -2.45 (8M) -7.87(16M) -18.5 : (4M) -.10 (8M) -.30(16M) -.80 :
: (1/L)*10 : (39.192M)***** (OBSERVED DATA): (39.192M)-2.12 (OBSERVED DATA): (39.192M)***** (OBSERVED DATA):
: USTAR : (4M) -.28 (8M) -.38 (16M) -.40: (4M) -6.46 (8M) -10.3 (16M) -12.1 : (4M) -.28 (8M) -.42 (16M) -.53 :
: : (4M).3032 (8M).2948 (16M).2886: (4M).3182 (8M).3322 (16M).3381: (4M).1474 (8M).1440 (16M).1439:
:
: WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE :
: HEIGHT (M) : (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) :
: 1. : 16.75 : 17.05 : 16.47 :
: 2. : 342. : 3.36 16.60 12.4 : 10. : 2.56 16.88 20.9 : 44. : 1.66 16.45 11.6 :
: 4. : 340. : 3.82 15.76 12.4 : 6. : 2.80 15.90 20.4 : 40. : 1.84 15.69 10.0 :
: 8. : 331. : 4.19 16.21 11.5 : 5.3: 360. : 2.93 16.32 20.0 : 7.1: 34. : 2.01 16.16 8.0 :
: 16. : 338. : 4.41 16.15 10.1 : 6.0: 6. : 2.94 16.29 17.7 : 8.7: 40. : 2.10 16.13 7.3 :
: 32. : 337. : 4.47 15.90 10.3 : 7.4: 3. : 2.97 15.96 16.9 : 10.4: 43. : 2.21 15.90 7.9 :
: 48. : 337. : 4.49 15.66 10.6 : 8.7: 360. : 2.81 15.70 16.3 : 11.6: 46. : 2.18 15.66 9.0 :

```

LEAST SQUARES FITTED DATA

```

: WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE :
: HEIGHT (M) : (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) :
: 1.0 : 3.33 16.43 13.1 2.9 : 2.64 16.68 22.7 4.0 : 1.62 16.25 11.1 4.9 :
: 2.0 : 3.54 16.41 12.5 3.6 : 2.69 16.64 21.4 4.9 : 1.72 16.24 10.4 5.3 :
: 4.0 : 3.76 16.35 11.9 4.3 : 2.75 16.57 20.2 5.9 : 1.83 16.21 9.7 5.8 :
: 8.0 : 4.00 16.25 11.4 5.2 : 2.81 16.42 19.1 7.1 : 1.94 16.16 9.1 6.3 :
: 16.0 : 4.25 16.07 10.9 6.3 : 2.87 16.18 18.0 8.6 : 2.06 16.05 8.5 6.9 :
: 32.0 : 4.51 15.82 10.4 7.6 : 2.93 15.85 17.0 10.4 : 2.19 15.86 8.0 7.5 :
: 48.0 : 4.68 15.70 10.1 8.5 : 2.96 15.75 16.4 11.6 : 2.27 15.68 7.7 7.8 :
:
: DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI :
: 4.0 : .0764 -.0162 -.062 .00 : .0192 -.0266 -.191 -.01 : .0368 -.0038 -.062 .00 :
: 8.0 : .0406 -.0135 -.184 -.07 : .0098 -.0223 -.614 -.09 : .0195 -.0034 -.196 -.08 :
: 16.0 : .0216 -.0081 -.388 -.29 : .0050 -.0137 -1.445 -.33 : .0104 -.0025 -.517 -.40 :
: 39.2* : .0012 -.0050 -1.298 -.78 : -.0100 -.0062 -3.876 -22.00 : -.0019 -.0050 -5.398 -11.89 :

```

* OBSERVED DATA

OBSERVED DATA

| DATE 05/04/77 TIME 19:00:00 : DATE 05/04/77 TIME 20:00:00 : DATE 05/04/77 TIME 21:00:00 : | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|
| WEATHER : WEATHER : WEATHER : | | | | | | | | | |
| TEMP DEG C 16.7 : TEMP DEG C 13.3 : TEMP DEG C 12.8 : | | | | | | | | | |
| DEW POINT DEG C -3.3 : DEW POINT DEG C -2.8 : DEW POINT DEG C -1.7 : | | | | | | | | | |
| VISIBILITY (MI) 85 : VISIBILITY (MI) 30 : VISIBILITY (MI) 25 : | | | | | | | | | |
| CLD (TENTHS) : LOW 2 MID HI TOTAL 2:LOW MID HI TOTAL 0:LOW MID HI TOTAL 0: | | | | | | | | | |
| EXPONENTS : LOW 1830 MID HI TOTAL 2:LOW MID HI TOTAL 0:LOW MID HI TOTAL 0: | | | | | | | | | |
| NET RADIATION : A= .77 B= .82 P= .18 : A= -.93 B= -.04 P= .15 : A= -.15 B= .51 P= .19 : | | | | | | | | | |
| RICHARDSON NO. : -9.00 MW/CM2 : -7.95 MW/CM2 : -7.60 MW/CM2 : | | | | | | | | | |
| (1/L)*10 : (4M) 2.77 (8M) 7.09 (16M) 12.39 : (4M) 4.10 (8M) 10.91 (16M) 20.28 : (4M) 4.52 (8M) 11.18 (16M) 18.24 : | | | | | | | | | |
| USTAR : (39.192M) 3.40 (OBSERVED DATA) : (39.192M) 5.40 (OBSERVED DATA) : (39.192M) .30 (OBSERVED DATA) : | | | | | | | | | |
| WS : (4M)***** (8M)***** (16M)***** : (4M)***** (8M)***** (16M)***** : (4M)***** (8M)***** (16M)***** : | | | | | | | | | |
| WD : (4M).0064 (8M).0030 (16M).0020 : (4M).0074 (8M).0032 (16M).0020 : (4M).0055 (8M).0026 (16M).0019 : | | | | | | | | | |
| HEIGHT (M) : WS TEMP SGA SGE : WS TEMP SGA SGE : WS TEMP SGA SGE : | | | | | | | | | |
| 1. : WD (DEG) (M/S) (C) (DEG) (DEG) : WD (DEG) (M/S) (C) (DEG) (DEG) : WD (DEG) (M/S) (C) (DEG) (DEG) : | | | | | | | | | |
| 2. : 13.91 : 9.11 : 7.06 : | | | | | | | | | |
| 4. : 46. : 183. : 151. : 151. : | | | | | | | | | |
| 8. : 38. : 173. : 135. : 135. : | | | | | | | | | |
| 16. : 29. : 158. : 132. : 132. : | | | | | | | | | |
| 32. : 42. : 146. : 133. : 133. : | | | | | | | | | |
| 48. : 45. : 130. : 128. : 128. : | | | | | | | | | |
| WS : 1.25 15.35 2.0 1.9 : 1.99 14.90 2.2 2.5 : 1.78 12.75 2.6 3.0 : | | | | | | | | | |

LEAST SQUARES FITTED DATA

| DATE 05/04/77 TIME 19:00:00 : DATE 05/04/77 TIME 20:00:00 : DATE 05/04/77 TIME 21:00:00 : | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|
| WEATHER : WEATHER : WEATHER : | | | | | | | | | |
| TEMP DEG C 16.7 : TEMP DEG C 13.3 : TEMP DEG C 12.8 : | | | | | | | | | |
| DEW POINT DEG C -3.3 : DEW POINT DEG C -2.8 : DEW POINT DEG C -1.7 : | | | | | | | | | |
| VISIBILITY (MI) 85 : VISIBILITY (MI) 30 : VISIBILITY (MI) 25 : | | | | | | | | | |
| CLD (TENTHS) : LOW 2 MID HI TOTAL 2:LOW MID HI TOTAL 0:LOW MID HI TOTAL 0: | | | | | | | | | |
| EXPONENTS : LOW 1830 MID HI TOTAL 2:LOW MID HI TOTAL 0:LOW MID HI TOTAL 0: | | | | | | | | | |
| NET RADIATION : A= .77 B= .82 P= .18 : A= -.93 B= -.04 P= .15 : A= -.15 B= .51 P= .19 : | | | | | | | | | |
| RICHARDSON NO. : -9.00 MW/CM2 : -7.95 MW/CM2 : -7.60 MW/CM2 : | | | | | | | | | |
| (1/L)*10 : (4M) 2.77 (8M) 7.09 (16M) 12.39 : (4M) 4.10 (8M) 10.91 (16M) 20.28 : (4M) 4.52 (8M) 11.18 (16M) 18.24 : | | | | | | | | | |
| USTAR : (39.192M) 3.40 (OBSERVED DATA) : (39.192M) 5.40 (OBSERVED DATA) : (39.192M) .30 (OBSERVED DATA) : | | | | | | | | | |
| WS : (4M)***** (8M)***** (16M)***** : (4M)***** (8M)***** (16M)***** : (4M)***** (8M)***** (16M)***** : | | | | | | | | | |
| WD : (4M).0064 (8M).0030 (16M).0020 : (4M).0074 (8M).0032 (16M).0020 : (4M).0055 (8M).0026 (16M).0019 : | | | | | | | | | |
| HEIGHT (M) : WS TEMP SGA SGE : WS TEMP SGA SGE : WS TEMP SGA SGE : | | | | | | | | | |
| 1.0 : 46. : 183. : 151. : 151. : | | | | | | | | | |
| 2.0 : 38. : 173. : 135. : 135. : | | | | | | | | | |
| 4.0 : 29. : 158. : 132. : 132. : | | | | | | | | | |
| 8.0 : 42. : 146. : 133. : 133. : | | | | | | | | | |
| 16.0 : 45. : 130. : 128. : 128. : | | | | | | | | | |
| 32.0 : 1.25 15.35 2.0 1.9 : 1.99 14.90 2.2 2.5 : 1.78 12.75 2.6 3.0 : | | | | | | | | | |
| 48.0 : WS : 1.25 15.35 2.0 1.9 : 1.99 14.90 2.2 2.5 : 1.78 12.75 2.6 3.0 : | | | | | | | | | |
| DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : | | | | | | | | | |
| 4.0 : .0347 .0979 7.605 : .0495 .2920 8.268 : .0510 .3396 14.567 : | | | | | | | | | |
| 8.0 : .0196 .0803 19.446 : .0275 .2412 21.997 : .0292 .2758 36.018 : | | | | | | | | | |
| 16.0 : .0111 .0450 34.008 : .0153 .1395 40.894 : .0167 .1482 58.792 : | | | | | | | | | |
| 39.2* : .0025 .0006 2.162 : .0069 .0075 10.526 : .0169 .0025 4.944 : | | | | | | | | | |

* OBSERVED DATA

OBSERVED DATA

| | DATE 05/04/77 | TIME 22:00:00 | DATE 05/04/77 | TIME 23:00:00 | DATE 06/04/77 | TIME 00:00:00 | | | | | | |
|----------------|----------------------------------|--------------------------------------|-------------------------------------|-------------------------------------|---------------------------------------|---------------------------------------|--------------------------|----------------------|-------------|------------|-------|-------|
| | WEATHER | | | WEATHER | | | | | | | | |
| | TEMP DEG C | 11.1 | TEMP DEG C | 6.7 | TEMP DEG C | 5.6 | | | | | | |
| | DEW POINT DEG C | -1.7 | DEW POINT DEG C | -3.1 | DEW POINT DEG C | -3.3 | | | | | | |
| | VISIBILITY (MI) | 25 | VISIBILITY (MI) | 25 | VISIBILITY (MI) | 25 | | | | | | |
| CLD (TENTHS) | LOW | HI | TOTL | LOW | HI | TOTL | 0 | | | | | |
| CLD HT (M) | LOW | MID | HI | LOW | MID | HI | | | | | | |
| EXPONENTS | A = -.84 B = -.65 P = .60 | | | A = -.28 B = .43 P = .28 | | | A = -.03 B = .50 P = .20 | | | | | |
| NET RADIATION | -7.60 MW/CM2 | | | -7.18 MW/CM2 | | | -7.18 MW/CM2 | | | | | |
| RICHARDSON NO. | (4M) | .24 (8M) | .36 (16M) | .46 : (4M) | .30* (8M) | .61* (16M) | 2.47 : (4M) | .42* (8M) | 1.90* (16M) | 7.08 : | | |
| | (39.192M) | .25 (OBSERVED DATA) | (39.192M) | (39.192M) | 2.21 (OBSERVED DATA) | (39.192M) | (39.192M) | 3.45 (OBSERVED DATA) | | | | |
| (1/LI)*10 | (4M) 2.73 (8M) 2.95 (16M) 2.24 : | (4M) 4.204* (8M) 7.68* (16M) 58.56 : | (4M) 7.62* (8M) 70.47 (16M) ***** : | (4M) .0523 (8M) .0607 (16M) .0761 : | (4M) .0755* (8M) .0665* (16M) .0244 : | (4M) .0728* (8M) .0315* (16M) .0088 : | | | | | | |
| USTAR | | | | | | | | | | | | |
| HEIGHT (M) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | | |
| 1. | | | | | | | | | | | | |
| 2. | 72. | .91 | 5.74 | 32.7 | 170. | 1.52 | 5.85 | 17.1 | 160. | 1.51 | 4.51 | 8.7 |
| 4. | 77. | 1.17 | 6.29 | 31.5 | 175. | 1.98 | 6.31 | 11.4 | 168. | 2.27 | 6.25 | 6.2 |
| 8. | 99. | 1.60 | 7.33 | 21.3 | 4.9 : 178. | 2.75 | 7.97 | 6.2 | 2.1 : 172. | 3.05 | 9.17 | 3.9 |
| 16. | 123. | 2.82 | 8.77 | 5.6 | 2.7 : 183. | 3.66 | 10.29 | 4.6 | 2.0 : 172. | 3.29 | 10.89 | 4.6 |
| 32. | 122. | 4.39 | 9.95 | 3.8 | 1.6 : 175. | 3.57 | 10.71 | 6.1 | 3.2 : 162. | 3.06 | 11.16 | 5.8 |
| 48. | 122. | 5.69 | 10.56 | 3.3 | 1.6 : 170. | 3.47 | 10.59 | 7.7 | 4.4 : 161. | 2.98 | 11.04 | 7.9 |
| | | | | | | | | | | | | 2.0 : |

LEAST SQUARES FITTED DATA

| HEIGHT (M) : | | | | | | | | | | | | | |
|---|---------|-------|--------|-------|----------|-------|--------|-------|----------|-------|--------|-------|---|
| WS | | TEMP | | SIGA | | SIGE | | WS | | TEMP | | SIGA | |
| (M/S) | | (C) | | (DEG) | | (DEG) | | (M/S) | | (C) | | (DEG) | |
| 1.0 | : .54 | 5.85 | 79.4 | 17.5 | : 1.39 | 5.42 | 15.7 | .8 | : 1.63 | 4.48 | 6.5 | .3 | : |
| 2.0 | : .81 | 6.07 | 44.4 | 11.2 | : 1.69 | 5.78 | 12.9 | 1.0 | : 1.87 | 4.99 | 6.3 | .4 | : |
| 4.0 | : 1.23 | 6.48 | 24.8 | 7.1 | : 2.04 | 6.47 | 10.6 | 1.4 | : 2.14 | 5.95 | 6.2 | .6 | : |
| 8.0 | : 1.86 | 7.25 | 13.8 | 4.6 | : 2.47 | 7.71 | 8.7 | 1.8 | : 2.46 | 7.68 | 6.0 | .8 | : |
| 16.0 | : 2.81 | 8.55 | 7.7 | 2.9 | : 3.00 | 9.66 | 7.2 | 2.4 | : 2.82 | 10.36 | 5.9 | 1.1 | : |
| 32.0 | : 4.26 | 10.17 | 4.3 | 1.9 | : 3.63 | 11.43 | 5.9 | 3.3 | : 3.23 | 12.55 | 5.7 | 1.6 | : |
| 48.0 | : 5.43 | 10.49 | 3.1 | 1.4 | : 4.06 | 10.35 | 5.3 | 3.9 | : 3.50 | 10.52 | 5.7 | 1.9 | : |
| DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : | | | | | | | | | | | | | |
| 4.0 | : .1745 | .2075 | 7.731 | .00 | : .1312 | .3320 | 4.466 | .00 | : .0980 | .4596 | 5.621 | .00 | : |
| 8.0 | : .1321 | .1821 | 11.807 | .00 | : .0795 | .2763 | 10.090 | .00 | : .0562 | .3773 | 13.954 | .00 | : |
| 16.0 | : .1000 | .1314 | 14.795 | .00 | : .0481 | .1650 | 16.310 | .00 | : .0322 | .2127 | 23.706 | .00 | : |
| 39.2* | : .0813 | .0481 | 10.330 | .00 | : -.0062 | .0025 | 1.067 | .00 | : -.0050 | .0025 | 1.448 | .00 | : |

* OBSERVED DATA

OBSERVED DATA

DATE 06/04/77 TIME 01:00:00 : DATE 06/04/77 TIME 02:00:00 : DATE 06/04/77 TIME 03:00:00 :
 WEATHER : WEATHER : WEATHER :
 TEMP DEG C 3.2 : TEMP DEG C 2.2 : TEMP DEG C 2.2 :
 DEW POINT DEG C -4.5 : DEW POINT DEG C -4.5 : DEW POINT DEG C -4.5 :
 VISIBILITY (MI) 20 : VISIBILITY (MI) 20 : VISIBILITY (MI) 20 :
 CLD (TENTHS) :LOW MID HI TOTL 0:LOW MID HI TOTL 0:LOW MID HI TOTL 0:
 CLD HT (M) :LOW MID HI TOTL 0:LOW MID HI TOTL 0:LOW MID HI TOTL 0:
 EXPONENTS : A= -.33 B= .10 P= .19 : A= -.48 B= .27 P= .33 : A= -.61 B= .12 P= .47 :
 NET RADIATION : -6.83 MW/CM2 : -7.18 MW/CM2 : -7.18 MW/CM2 :
 RICHARDSON NO.: (4M) .27*(8M)1.03*(16M) 5.05 : (4M) .57 (8M) 1.31(16M) 2.65 : (4M) .19 (8M) .38(16M) .72 :
 (1/L)*10 : (39.192M) 1.04 (OBSERVED DATA): (39.192M) 2.04 (OBSERVED DATA): (39.192M) 4.71 (OBSERVED DATA):
 USTAR : (4M) 3.36(8M) 21.1*(16M)*****: (4M)13.50 (8M)33.73 (16M)67.57: (4M) 1.80 (8M) 3.16 (16M) 5.37:
 : (4M).107* (8M).058* (16M).0136: (4M).0489 (8M).0324 (16M).0222: (4M).0800 (8M).0749 (16M).0676:

HEIGHT (M) : WS TEMP SIGA SIGE : WS TEMP SIGA SIGE : WS TEMP SIGA SIGE :
 : (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) :
 1. : 3.48 : .79 : 152. : 1.22 : -57 :
 2. : 143. : 1.69 : 4.15 : 6.8 : 1.36 : 1.07 : 12.0 : 1.88 : .45 : 24.2 :
 4. : 139. : 2.65 : 5.88 : 4.7 : 1.87 : 1.34 : 10.8 : 1.88 : .45 : 22.4 :
 8. : 136. : 3.42 : 7.90 : 3.8 : 2.37 : 2.00 : 8.9 : 2.25 : 1.53 : 21.7 :
 16. : 137. : 3.75 : 8.73 : 1.9 : 3.44 : 3.90 : 7.5 : 2.82 : 2.23 : 13.4 :
 32. : 133. : 3.61 : 9.84 : 2.0 : 3.47 : 8.89 : 2.9 : 4.93 : 4.29 : 4.2 :
 48. : 134. : 3.16 : 10.06 : 3.0 : 3.82 : 9.18 : 3.1 : 5.48 : 6.66 : 4.5 :
 : 1.3: 129. : 1.1: 145. : .9: 145. : .5: 145. : .4: 145. :

LEAST SQUARES FITTED DATA

HEIGHT (M) : WS TEMP SIGA SIGE : WS TEMP SIGA SIGE : WS TEMP SIGA SIGE :
 : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) :
 1.0 : 1.88 : 4.27 : 7.4 : .7 : 1.17 : .42 : 20.3 : .4 : .89 : -25 : 50.9 : .3 :
 2.0 : 2.14 : 4.65 : 5.9 : .7 : 1.47 : .74 : 14.6 : .5 : 1.24 : -.07 : 33.4 : .3 :
 4.0 : 2.44 : 5.36 : 4.7 : .8 : 1.84 : 1.37 : 10.5 : .6 : 1.71 : .28 : 21.9 : .4 :
 8.0 : 2.78 : 6.66 : 3.7 : .8 : 2.31 : 2.57 : 7.5 : .7 : 2.36 : .97 : 14.4 : .4 :
 16.0 : 3.18 : 8.71 : 2.9 : .9 : 2.90 : 4.68 : 5.4 : .8 : 3.25 : 2.27 : 9.4 : .4 :
 32.0 : 3.62 : 10.66 : 2.3 : .9 : 3.64 : 7.83 : 3.9 : 1.0 : 4.49 : 4.59 : 6.2 : .5 :
 48.0 : 3.91 : 9.74 : 2.0 : 1.0 : 4.15 : 9.55 : 3.2 : 1.1 : 5.42 : 6.54 : 4.8 : .5 :
 : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI :
 4.0 : .1073 : .3447 : 3.254 : .00 : .1405 : .3138 : 5.271 : .00 : .1866 : .1831 : 3.607 : .00 :
 8.0 : .0612 : .2887 : 8.343 : .00 : .0881 : .2857 : 12.148 : .00 : .1288 : .1757 : 7.245 : .00 :
 16.0 : .0349 : .1767 : 15.588 : .00 : .0552 : .2295 : 24.620 : .00 : .0889 : .1610 : 13.862 : .00 :
 39.2* : -.0281 : .0238 : 10.874 : .00 : .0219 : .0281 : 11.402 : .00 : .0344 : .1581 : 31.882 : .00 :

* OBSERVED DATA

[illegible]

| HEIGHT (M) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : |
|--------------|------------|------------|--------------|--------------|------------|------------|--------------|--------------|------------|------------|--------------|--------------|
| 1.0 : | .86 : | 1.10 : | 15.9 : | 51.6 : | 1.26 : | 6.71 : | 16.6 : | 22.5 : | .86 : | 11.04 : | 43.3 : | 11.1 : |
| 2.0 : | 1.14 : | 1.18 : | 12.0 : | 26.8 : | 1.31 : | 6.65 : | 15.0 : | 18.3 : | .90 : | 10.99 : | 39.5 : | 13.5 : |
| 4.0 : | 1.51 : | 1.34 : | 9.1 : | 13.9 : | 1.37 : | 6.55 : | 13.5 : | 14.8 : | .94 : | 10.89 : | 36.0 : | 16.4 : |
| 8.0 : | 2.01 : | 1.67 : | 6.9 : | 7.2 : | 1.43 : | 6.36 : | 12.2 : | 12.0 : | .98 : | 10.72 : | 32.8 : | 19.9 : |
| 16.0 : | 2.67 : | 2.33 : | 5.2 : | 3.7 : | 1.49 : | 6.06 : | 11.0 : | 9.8 : | 1.02 : | 10.43 : | 29.8 : | 24.1 : |
| 32.0 : | 3.55 : | 3.66 : | 3.9 : | 1.9 : | 1.55 : | 5.75 : | 9.9 : | 7.9 : | 1.07 : | 10.13 : | 27.2 : | 29.3 : |
| 48.0 : | 4.19 : | 5.00 : | 3.3 : | 1.3 : | 1.59 : | 5.84 : | 9.3 : | 7.0 : | 1.10 : | 10.17 : | 25.7 : | 32.8 : |
| ----- | | | | | | | | | | | | |
| : | DU/DZ : | DTH/DZ : | BU*100 : | RI : | DU/DZ : | DTH/DZ : | BU*100 : | RI : | DU/DZ : | DTH/DZ : | BU*100 : | RI : |
| ----- | | | | | | | | | | | | |
| 4.0 : | .1451 : | .0918 : | 2.293 : | .00 : | .0192 : | -.0389 : | -1.168 : | -.17 : | .0137 : | -.0351 : | -2.212 : | -.33 : |
| 8.0 : | .0964 : | .0922 : | 5.210 : | .00 : | .0100 : | -.0311 : | -3.435 : | -.60 : | .0071 : | -.0283 : | -6.536 : | -2.16 : |
| 16.0 : | .0640 : | .0928 : | 11.864 : | .00 : | .0052 : | -.0155 : | -6.302 : | -5.62 : | .0037 : | -.0147 : | -12.427 : | -21.51 : |
| 39.2* : | -.0437 : | .0344 : | 10.790 : | .00 : | .0075 : | .0113 : | 25.137 : | .00 : | .0050 : | .0044 : | 21.244 : | .00 : |

A-183

[illegible]

| HEIGHT (M) | WD :(DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|--------------|-------------|-------------|---------------|---------------|-------------|-------------|-------------|---------------|---------------|-------------|-------------|-------------|---------------|---------------|
| 1. | : | | 20.03 | | | : | | 20.50 | | | : | | 21.02 | | |
| 2. | : | 179. | 20.02 | 17.3 | | : | 154. | 1.27 | 20.36 | 47.2 | : | 102. | 2.03 | 20.76 | 38.3 |
| 4. | : | 175. | 19.03 | 15.6 | | : | 149. | 1.41 | 19.66 | 46.2 | : | 96. | 2.16 | 20.01 | 31.1 |
| 8. | : | 171. | 19.13 | 13.9 | | : | 9.7: | 1.53 | 19.71 | 42.6 | : | 19.3: | 2.29 | 20.11 | 30.6 |
| 16. | : | 177. | 18.83 | 12.4 | | : | 11.2: | 1.82 | 19.55 | 38.9 | : | 22.3: | 2.31 | 19.99 | 30.7 |
| 32. | : | 175. | 18.41 | 11.1 | | : | 13.2: | 2.03 | 19.26 | 41.3 | : | 25.8: | 2.40 | 19.76 | 28.3 |
| 48. | : | 173. | 18.26 | 11.4 | | : | 13.1: | 2.14 | 19.23 | 36.7 | : | 27.2: | 2.63 | 19.48 | 26.2 |

| LEAST SQUARES FITTED DATA | | | | | | | | | | | | | | |
|---------------------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|--------|----|
| HEIGHT (M) : | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | | |
| 1.0 : | 2.91 | 19.80 | 18.9 | 6.7 | 1.11 | 20.25 | 49.9 | 12.9 | 1.94 | 20.66 | 38.4 | 17.2 | | |
| 2.0 : | 3.13 | 19.72 | 17.1 | 7.6 | 1.25 | 20.19 | 47.5 | 14.8 | 2.04 | 20.60 | 36.0 | 18.4 | | |
| 4.0 : | 3.36 | 19.56 | 15.5 | 8.6 | 1.41 | 20.07 | 45.2 | 16.9 | 2.14 | 20.49 | 33.7 | 19.6 | | |
| 8.0 : | 3.61 | 19.26 | 14.0 | 9.8 | 1.59 | 19.84 | 42.9 | 19.4 | 2.25 | 20.29 | 31.5 | 20.9 | | |
| 16.0 : | 3.87 | 18.79 | 12.7 | 11.1 | 1.79 | 19.49 | 40.8 | 22.2 | 2.36 | 19.96 | 29.5 | 22.3 | | |
| 32.0 : | 4.16 | 18.27 | 11.5 | 12.6 | 2.01 | 19.15 | 38.8 | 25.4 | 2.48 | 19.57 | 27.7 | 23.8 | | |
| 48.0 : | 4.33 | 18.32 | 10.8 | 13.6 | 2.15 | 19.28 | 37.7 | 27.5 | 2.55 | 19.56 | 26.6 | 24.7 | | |
| : | DU/DZ | OTH/DZ | BU*100 | RI | : | DU/DZ | OTH/DZ | BU*100 | RI | : | DU/DZ | OTH/DZ | BU*100 | RI |

| | | | | | | | | | | | | | | |
|-------|---------|--------|--------|-------|---|-------|--------|--------|--------|---|-------|--------|--------|--------|
| 4.0 | : .0797 | -.0655 | -.311 | -.09 | : | .0555 | -.0471 | -1.266 | -.69 | : | .0346 | -.0415 | -.483 | -.11 |
| 8.0 | : .0428 | -.0542 | -.894 | -.50 | : | .0312 | -.0378 | -3.210 | -5.05 | : | .0181 | -.0343 | -1.450 | -.60 |
| 16.0 | : .0230 | -.0316 | -1.812 | -2.60 | : | .0176 | -.0191 | -5.128 | -19.00 | : | .0095 | -.0199 | -3.052 | -3.07 |
| 39.2* | : .0113 | .0006 | .181 | .00 | : | .0069 | .0081 | 9.672 | .00 | : | .0144 | -.0075 | -6.152 | -69.58 |

A-185

OBSERVED DATA

```

: DATE 06/04/77 TIME 16:00:00 : DATE 06/04/77 TIME 17:00:00 : DATE 06/04/77 TIME 18:00:00 :
: WEATHER : WEATHER : WEATHER :
: TEMP DEG C 22.8 : TEMP DEG C 22.3 : TEMP DEG C 22.3 :
: DEW POINT DEG C -4.8 : DEW POINT DEG C -5.0 : DEW POINT DEG C -6.1 :
: VISIBILITY (MI) 85 : VISIBILITY (MI) 85 : VISIBILITY (MI) 85 :
: CLD (TENTHS) :LOW 2 MID HI TOTAL 2:LOW 2 MID HI TOTAL 2:LOW 2 MID HI TOTAL 2:
: CLD HT (M) :LOW 1830 MID HI TOTAL 2:LOW 1830 MID HI TOTAL 2:LOW 1830 MID HI TOTAL 2:
: EXPONENTS : A= -.12 B= .08 P= .14 : A= -.13 B= .07 P= .09 : A= -.22 B= .17 P= .07 :
: NET RADIATION : 20.31 MW/CM2 : 6.91 MW/CM2 : -4.61 MW/CM2 :
: RICHARDSON NO.: (4M) -.24 (8M) -.68 (16M) -1.56 : (4M) -.49 (8M) -1.43 (16M) -3.05 : (4M) .51 (8M) 1.29 (16M) .63 :
: (1/L)*10 : (39.192M) -3.51 (OBSERVED DATA) : (39.192M) .27 (OBSERVED DATA) : (39.192M) ***** (OBSERVED DATA) :
: USTAR : (4M) -.67 (8M) -.92 (16M) -1.04 : (4M) -1.32 (8M) -1.90 (16M) -2.01 : (4M) 11.00 (8M) 32.77 (16M) 4.17 :
: : (4M) .1491 (8M) .1536 (16M) .1593 : (4M) .1798 (8M) .1817 (16M) .1816 : (4M) .0291 (8M) .0152 (16M) .0254 :

```

```

: WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE :
: (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) :
: 1. : 127. : 1.56 : 21.09 : 44.5 : 154. : 1.78 : 21.05 : 62.6 : 100. : .95 : 20.46 : 21.3 :
: 2. : 122. : 1.76 : 20.64 : 37.7 : 152. : 2.01 : 20.10 : 64.9 : 93. : 1.02 : 19.66 : 20.3 :
: 4. : 122. : 1.98 : 20.73 : 31.9 : 18.7 : 2.18 : 20.59 : 66.0 : 16.5 : 1.09 : 20.28 : 18.6 :
: 8. : 125. : 2.09 : 20.63 : 29.2 : 21.7 : 2.21 : 20.55 : 63.0 : 19.9 : 1.17 : 20.21 : 15.2 :
: 16. : 121. : 2.32 : 20.37 : 35.0 : 21.2 : 2.27 : 20.12 : 45.3 : 18.3 : 1.21 : 19.99 : 12.8 :
: 32. : 116. : 2.49 : 20.02 : 27.0 : 22.1 : 2.47 : 19.98 : 42.1 : 19.4 : 1.16 : 19.72 : 10.4 :
: 48. :

```

LEAST SQUARES FITTED DATA

```

: WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE :
: (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) :
: 1.0 : 1.44 : 21.07 : 45.1 : 16.4 : 1.74 : 20.85 : 77.4 : 15.0 : .93 : 20.24 : 27.0 : 6.0 :
: 2.0 : 1.58 : 21.03 : 41.4 : 17.3 : 1.85 : 20.82 : 70.6 : 15.7 : .97 : 20.24 : 23.2 : 6.8 :
: 4.0 : 1.75 : 20.96 : 38.1 : 18.3 : 1.96 : 20.75 : 64.3 : 16.5 : 1.02 : 20.23 : 19.9 : 7.7 :
: 8.0 : 1.93 : 20.83 : 35.0 : 19.3 : 2.09 : 20.62 : 58.7 : 17.3 : 1.07 : 20.20 : 17.0 : 8.6 :
: 16.0 : 2.12 : 20.60 : 32.2 : 20.4 : 2.22 : 20.40 : 53.5 : 18.1 : 1.13 : 20.14 : 14.6 : 9.7 :
: 32.0 : 2.34 : 20.26 : 29.6 : 21.6 : 2.36 : 20.10 : 48.8 : 19.0 : 1.18 : 19.97 : 12.5 : 10.9 :
: 48.0 : 2.48 : 20.07 : 28.2 : 22.3 : 2.44 : 20.00 : 46.3 : 19.5 : 1.22 : 19.73 : 11.5 : 11.7 :
: DU/DZ DTH/DZ RU*100 RI : DU/DZ DTH/DZ RU*100 RI : DU/DZ DTH/DZ RU*100 RI :
: 4.0 : .0570 : -.0233 : -.407 : -.12 : .0399 : -.0232 : -.321 : -.10 : .0168 : .0043 : .220 : .00 :
: 8.0 : .0314 : -.0202 : -1.163 : -.99 : .0212 : -.0194 : -.949 : -.48 : .0088 : .0030 : .557 : .00 :
: 16.0 : .0173 : -.0141 : -2.664 : -5.98 : .0113 : -.0116 : -2.021 : -2.57 : .0046 : .0004 : .274 : .00 :
: 39.2* : .0106 : -.0119 : -10.609 : -134.14 : .0125 : .0012 : 1.152 : .00 : -.0031 : -.0069 : -25.042 : -250.53 :

```

* OBSERVED DATA

OBSERVED DATA

| DATE 06/04/77 TIME 19:00:00 : DATE 06/04/77 TIME 20:00:00 : DATE 06/04/77 TIME 21:00:00 : | | | | | | | | | | |
|---|---|----------|----------------|------------|----------------|----------|----------------|----------|----------------|------------|
| WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | | |
| CLD (TENTHS) | LOW 2 MID HI | TOTL | 2:LOW 2 MID HI | TOTL | 2:LOW 2 MID HI | TOTL | 2:LOW 2 MID HI | TOTL | 2:LOW 2 MID HI | |
| CLD HT (M) | LOW 1525 MID | HI | LOW 1525 MID | HI | LOW 1525 MID | HI | LOW 1525 MID | HI | LOW 1525 MID | |
| EXPONENTS | A = -.03 B = -.37 P = .27 | | | | | | | | | |
| NET RADIATION | -9.77 MW/CM2 | | | | | | | | | |
| RICHARDSON NO. | (4M) .39 (8M) .89 (16M) 1.38 : (4M) .49 (8M) 1.00 (16M) 1.45 : (4M) .12 (8M) .26 (16M) .42 : | | | | | | | | | |
| (1/L)*10 | (39.192M) 6.97 (OBSERVED DATA) : (39.192M) 11.74 (OBSERVED DATA) : (39.192M) 5.76 (OBSERVED DATA) : | | | | | | | | | |
| USTAR | (4M) 6.83 (8M) 15.98 (16M) 18.63 : (4M) 10.14 (8M) 20.16 (16M) 20.52 : (4M) .86 (8M) 1.58 (16M) 1.95 : | | | | | | | | | |
| | (4M) .0681 (8M) .0464 (16M) .0391 : (4M) .0703 (8M) .0520 (16M) .0484 : (4M) .1872 (8M) .1662 (16M) .1563 : | | | | | | | | | |
| HEIGHT (M) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
| 1. | 89. | 1.56 | 15.84 | 4.1 | 137. | 107. | 2.65 | 11.83 | 7.2 | |
| 2. | 86. | 2.16 | 16.82 | 3.4 | 127. | 102. | 3.43 | 12.25 | 5.9 | |
| 4. | 83. | 2.69 | 17.20 | 3.6 | 121. | 99. | 4.41 | 13.38 | 4.9 | 3.1: |
| 8. | 89. | 2.98 | 18.71 | 4.0 | 122. | 108. | 5.91 | 15.54 | 3.8 | 2.0: |
| 16. | 93. | 3.66 | 19.09 | 3.2 | 120. | 105. | 7.28 | 16.70 | 2.8 | .9: |
| 32. | 92. | 3.76 | 19.06 | 3.6 | 120. | 108. | 7.41 | 16.72 | 3.8 | 1.0: |
| 48. | | | | | | | | | | |

LEAST SQUARES FITTED DATA

| DATE 06/04/77 TIME 19:00:00 : DATE 06/04/77 TIME 20:00:00 : DATE 06/04/77 TIME 21:00:00 : | | | | | | | | | | |
|---|------------|------------|--------------|--------------|------------|--------------|--------------|------------|--------------|-------------------------|
| WEATHER : | | | | | | | | | | |
| CLD (TENTHS) : LOW 2 MID HI TOTL 2:LOW 2 MID HI TOTL 2:LOW 2 MID HI TOTL 2: | | | | | | | | | | |
| CLD HT (M) : LOW 1525 MID 1525 HI 1525 2:LOW 1525 MID 1525 HI 1525 2:LOW 1525 MID 1525 HI 1525 2: | | | | | | | | | | |
| EXPONENTS : A = -.03 B = -.37 P = .27 : A = -.23 B = .13 P = .34 : A = -.26 B = -.74 P = .34 : A = -.26 B = -.74 P = .34 : | | | | | | | | | | |
| NET RADIATION : -9.77 MW/CM2 | | | | | | | | | | |
| RICHARDSON NO. : (4M) .39 (8M) .89 (16M) 1.38 : (4M) .49 (8M) 1.00 (16M) 1.45 : (4M) .12 (8M) .26 (16M) .42 : | | | | | | | | | | |
| (1/L)*10 : (39.192M) 6.97 (OBSERVED DATA) : (39.192M) 11.74 (OBSERVED DATA) : (39.192M) 20.52 (OBSERVED DATA) : (39.192M) 30.91 (OBSERVED DATA) : (39.192M) 41.38 (OBSERVED DATA) : (39.192M) 51.76 (OBSERVED DATA) : (39.192M) 62.14 (OBSERVED DATA) : (39.192M) 72.52 (OBSERVED DATA) : | | | | | | | | | | |
| USTAR : (4M) 6.83 (8M) 15.98 (16M) 18.63 : (4M) 10.14 (8M) 20.16 (16M) 20.52 : (4M) .86 (8M) 1.58 (16M) 1.95 : | | | | | | | | | | |
| (4M) .0681 (8M) .0464 (16M) .0391 : (4M) .0703 (8M) .0520 (16M) .0484 : (4M) .1872 (8M) .1662 (16M) .1563 : | | | | | | | | | | |
| HEIGHT (M) : | WD (DEG) : | WS (M/S) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | SIGA (DEG) : | SIGE (DEG) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : |
| 1.0 : | | 1.41 | 16.56 | 3.9 | 3.5 | 1.50 | 11.11 | 7.4 | .4 | 2.15 11.72 8.3 14.6 : |
| 2.0 : | | 1.70 | 16.76 | 3.8 | 2.7 | 1.90 | 11.67 | 6.3 | .5 | 2.73 12.01 7.0 8.7 : |
| 4.0 : | | 2.05 | 17.15 | 3.8 | 2.1 | 2.40 | 12.73 | 5.3 | .5 | 3.45 12.55 5.8 5.2 : |
| 8.0 : | | 2.47 | 17.86 | 3.7 | 1.6 | 3.03 | 14.65 | 4.5 | .6 | 4.37 13.54 4.8 3.1 : |
| 16.0 : | | 2.98 | 18.93 | 3.6 | 1.2 | 3.83 | 17.64 | 3.8 | .6 | 5.53 15.15 4.0 1.9 : |
| 32.0 : | | 3.59 | 19.75 | 3.5 | 1.0 | 4.84 | 20.24 | 3.3 | .7 | 7.00 16.89 3.4 1.1 : |
| 48.0 : | | 4.01 | 18.81 | 3.5 | .8 | 5.55 | 18.36 | 3.0 | .7 | 8.03 16.67 3.0 .8 : |
| DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : | | | | | | | | | | |
| 4.0 : | | .1283 | .1925 | 2.465 | .00 | .1886 | .5063 | 4.823 | .00 | .2736 .2653 1.222 .00 : |
| 8.0 : | | .0773 | .1580 | 5.561 | .00 | .1191 | .4186 | 9.927 | .00 | .1732 .2268 2.600 .00 : |
| 16.0 : | | .0466 | .0890 | 8.598 | .00 | .0753 | .2431 | 14.302 | .00 | .1096 .1499 4.265 .00 : |
| 39.2* : | | .0062 | .0081 | 3.049 | .00 | .0050 | .0088 | 2.080 | .00 | .0081 .0112 1.085 .00 : |

* OBSERVED DATA

OBSERVED DATA

| DATE 06/04/77 TIME 22:00:00 : DATE 06/04/77 TIME 23:00:00 : DATE 07/04/77 TIME 00:00:00 : | | | | | | | | | |
|---|---|-----------------|---|-----------------|---|-----------------|---|-----------------|-----------------------------------|
| WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | |
| TEMP DEG C | 13.9 | TEMP DEG C | 9.5 | TEMP DEG C | 11.1 | TEMP DEG C | 11.1 | TEMP DEG C | 11.1 |
| DEW POINT DEG C | -3.9 | DEW POINT DEG C | -5.6 | DEW POINT DEG C | -4.5 | DEW POINT DEG C | -4.5 | DEW POINT DEG C | -4.5 |
| VISIBILITY (MI) | 25 | VISIBILITY (MI) | 25 | VISIBILITY (MI) | 25 | VISIBILITY (MI) | 25 | VISIBILITY (MI) | 25 |
| CLD (TENTHS) | LOW | CLD (TENTHS) | LOW | CLD (TENTHS) | LOW | CLD (TENTHS) | LOW | CLD (TENTHS) | LOW |
| CLD HT (MI) | LOW | CLD HT (MI) | LOW | CLD HT (MI) | LOW | CLD HT (MI) | LOW | CLD HT (MI) | LOW |
| EXPOSURE | A = -0.29 | EXPOSURE | A = -0.38 | EXPOSURE | A = -0.44 | EXPOSURE | A = -0.44 | EXPOSURE | A = -0.44 |
| NET RADIATION | -9.19 MW/CM2 | NET RADIATION | -9.19 MW/CM2 | NET RADIATION | -7.95 MW/CM2 | NET RADIATION | -7.95 MW/CM2 | NET RADIATION | -7.60 MW/CM2 |
| RICHARDSON NO. | (4M) .07 (8M) .15 (16M) .27 | RICHARDSON NO. | (4M) .14 (8M) .28 (16M) .50 | RICHARDSON NO. | (4M) .18 (8M) .30 (16M) .46 | RICHARDSON NO. | (4M) .18 (8M) .30 (16M) .46 | RICHARDSON NO. | (4M) .18 (8M) .30 (16M) .46 |
| (1/L)*10 | (39.192M) .41 (OBSERVED DATA) | (1/L)*10 | (39.192M) .84 (OBSERVED DATA) | (1/L)*10 | (39.192M) .47 (OBSERVED DATA) | (1/L)*10 | (39.192M) .47 (OBSERVED DATA) | (1/L)*10 | (39.192M) .47 (OBSERVED DATA) |
| USTAR | (4M) .39 (8M) .61 (16M) .84 | USTAR | (4M) .1772 (16M) .1780 | USTAR | (4M) .1175 (8M) .1120 (16M) .1063 | USTAR | (4M) .0833 (8M) .0895 (16M) .0991 | USTAR | (4M) .0833 (8M) .0895 (16M) .0991 |
| HEIGHT (M) | WD WS TEMP SIGA SIGE WD WS TEMP SIGA SIGE | HEIGHT (M) | WD WS TEMP SIGA SIGE WD WS TEMP SIGA SIGE | HEIGHT (M) | WD WS TEMP SIGA SIGE WD WS TEMP SIGA SIGE | HEIGHT (M) | WD WS TEMP SIGA SIGE WD WS TEMP SIGA SIGE | HEIGHT (M) | WD WS TEMP SIGA SIGE |
| 1. | 125. 2.17 9.99 6.4 | 1. | 125. 2.17 9.99 6.4 | 1. | 125. 2.17 9.99 6.4 | 1. | 125. 2.17 9.99 6.4 | 1. | 125. 2.17 9.99 6.4 |
| 2. | 119. 2.88 9.93 5.1 | 2. | 119. 2.88 9.93 5.1 | 2. | 119. 2.88 9.93 5.1 | 2. | 119. 2.88 9.93 5.1 | 2. | 119. 2.88 9.93 5.1 |
| 4. | 115. 3.83 11.03 3.2 | 4. | 115. 3.83 11.03 3.2 | 4. | 115. 3.83 11.03 3.2 | 4. | 115. 3.83 11.03 3.2 | 4. | 115. 3.83 11.03 3.2 |
| 8. | 117. 5.17 12.19 2.4 | 8. | 117. 5.17 12.19 2.4 | 8. | 117. 5.17 12.19 2.4 | 8. | 117. 5.17 12.19 2.4 | 8. | 117. 5.17 12.19 2.4 |
| 16. | 106. 6.72 13.09 2.3 | 16. | 106. 6.72 13.09 2.3 | 16. | 106. 6.72 13.09 2.3 | 16. | 106. 6.72 13.09 2.3 | 16. | 106. 6.72 13.09 2.3 |
| 32. | 98. 8.04 14.25 3.1 | 32. | 98. 8.04 14.25 3.1 | 32. | 98. 8.04 14.25 3.1 | 32. | 98. 8.04 14.25 3.1 | 32. | 98. 8.04 14.25 3.1 |
| 48. | 9.66 | 48. | 9.66 | 48. | 9.66 | 48. | 9.66 | 48. | 9.66 |

LEAST SQUARES FITTED DATA

| DATE 06/04/77 TIME 22:00:00 : DATE 06/04/77 TIME 23:00:00 : DATE 07/04/77 TIME 00:00:00 : | | | | | | | | | |
|---|---|-----------------|---|-----------------|---|-----------------|---|-----------------|-----------------------------------|
| WEATHER | | WEATHER | | WEATHER | | WEATHER | | WEATHER | |
| TEMP DEG C | 13.9 | TEMP DEG C | 9.5 | TEMP DEG C | 11.1 | TEMP DEG C | 11.1 | TEMP DEG C | 11.1 |
| DEW POINT DEG C | -3.9 | DEW POINT DEG C | -5.6 | DEW POINT DEG C | -4.5 | DEW POINT DEG C | -4.5 | DEW POINT DEG C | -4.5 |
| VISIBILITY (MI) | 25 | VISIBILITY (MI) | 25 | VISIBILITY (MI) | 25 | VISIBILITY (MI) | 25 | VISIBILITY (MI) | 25 |
| CLD (TENTHS) | LOW | CLD (TENTHS) | LOW | CLD (TENTHS) | LOW | CLD (TENTHS) | LOW | CLD (TENTHS) | LOW |
| CLD HT (MI) | LOW | CLD HT (MI) | LOW | CLD HT (MI) | LOW | CLD HT (MI) | LOW | CLD HT (MI) | LOW |
| EXPOSURE | A = -0.29 | EXPOSURE | A = -0.38 | EXPOSURE | A = -0.44 | EXPOSURE | A = -0.44 | EXPOSURE | A = -0.44 |
| NET RADIATION | -9.19 MW/CM2 | NET RADIATION | -9.19 MW/CM2 | NET RADIATION | -7.95 MW/CM2 | NET RADIATION | -7.95 MW/CM2 | NET RADIATION | -7.60 MW/CM2 |
| RICHARDSON NO. | (4M) .07 (8M) .15 (16M) .27 | RICHARDSON NO. | (4M) .14 (8M) .28 (16M) .50 | RICHARDSON NO. | (4M) .18 (8M) .30 (16M) .46 | RICHARDSON NO. | (4M) .18 (8M) .30 (16M) .46 | RICHARDSON NO. | (4M) .18 (8M) .30 (16M) .46 |
| (1/L)*10 | (39.192M) .41 (OBSERVED DATA) | (1/L)*10 | (39.192M) .84 (OBSERVED DATA) | (1/L)*10 | (39.192M) .47 (OBSERVED DATA) | (1/L)*10 | (39.192M) .47 (OBSERVED DATA) | (1/L)*10 | (39.192M) .47 (OBSERVED DATA) |
| USTAR | (4M) .39 (8M) .61 (16M) .84 | USTAR | (4M) .1772 (16M) .1780 | USTAR | (4M) .1175 (8M) .1120 (16M) .1063 | USTAR | (4M) .0833 (8M) .0895 (16M) .0991 | USTAR | (4M) .0833 (8M) .0895 (16M) .0991 |
| HEIGHT (M) | WD WS TEMP SIGA SIGE WD WS TEMP SIGA SIGE | HEIGHT (M) | WD WS TEMP SIGA SIGE WD WS TEMP SIGA SIGE | HEIGHT (M) | WD WS TEMP SIGA SIGE WD WS TEMP SIGA SIGE | HEIGHT (M) | WD WS TEMP SIGA SIGE WD WS TEMP SIGA SIGE | HEIGHT (M) | WD WS TEMP SIGA SIGE |
| 1.0 | 1.63 9.73 7.0 5.0 | 1.0 | 1.63 9.73 7.0 5.0 | 1.0 | 1.63 9.73 7.0 5.0 | 1.0 | 1.63 9.73 7.0 5.0 | 1.0 | 1.63 9.73 7.0 5.0 |
| 2.0 | 2.17 9.90 5.7 3.8 | 2.0 | 2.17 9.90 5.7 3.8 | 2.0 | 2.17 9.90 5.7 3.8 | 2.0 | 2.17 9.90 5.7 3.8 | 2.0 | 2.17 9.90 5.7 3.8 |
| 4.0 | 2.89 10.22 4.7 2.9 | 4.0 | 2.89 10.22 4.7 2.9 | 4.0 | 2.89 10.22 4.7 2.9 | 4.0 | 2.89 10.22 4.7 2.9 | 4.0 | 2.89 10.22 4.7 2.9 |
| 8.0 | 3.84 10.83 3.8 2.3 | 8.0 | 3.84 10.83 3.8 2.3 | 8.0 | 3.84 10.83 3.8 2.3 | 8.0 | 3.84 10.83 3.8 2.3 | 8.0 | 3.84 10.83 3.8 2.3 |
| 16.0 | 5.11 11.89 3.1 1.7 | 16.0 | 5.11 11.89 3.1 1.7 | 16.0 | 5.11 11.89 3.1 1.7 | 16.0 | 5.11 11.89 3.1 1.7 | 16.0 | 5.11 11.89 3.1 1.7 |
| 32.0 | 6.79 13.42 2.6 1.3 | 32.0 | 6.79 13.42 2.6 1.3 | 32.0 | 6.79 13.42 2.6 1.3 | 32.0 | 6.79 13.42 2.6 1.3 | 32.0 | 6.79 13.42 2.6 1.3 |
| 48.0 | 8.02 14.14 2.3 1.1 | 48.0 | 8.02 14.14 2.3 1.1 | 48.0 | 8.02 14.14 2.3 1.1 | 48.0 | 8.02 14.14 2.3 1.1 | 48.0 | 8.02 14.14 2.3 1.1 |
| DU/DZ | 0.1650 | DU/DZ | 0.1650 | DU/DZ | 0.1650 | DU/DZ | 0.1650 | DU/DZ | 0.1650 |
| RI | 1.096 | RI | 1.096 | RI | 1.096 | RI | 1.096 | RI | 1.096 |
| 4.0 | 2.781 | 4.0 | 2.781 | 4.0 | 2.781 | 4.0 | 2.781 | 4.0 | 2.781 |
| 8.0 | 1.849 | 8.0 | 1.849 | 8.0 | 1.849 | 8.0 | 1.849 | 8.0 | 1.849 |
| 16.0 | 1.230 | 16.0 | 1.230 | 16.0 | 1.230 | 16.0 | 1.230 | 16.0 | 1.230 |
| 39.2* | 0.0825 | 39.2* | 0.0825 | 39.2* | 0.0825 | 39.2* | 0.0825 | 39.2* | 0.0825 |

* OBSERVED DATA

OBSERVED DATA

```

: DATE 07/04/77 TIME 01:00:00 : DATE 07/04/77 TIME 02:00:00 : DATE 07/04/77 TIME 03:00:00 :
: WEATHER : WEATHER : WEATHER :
: TEMP DEG C 6.1 : TEMP DEG C 6.7 : TEMP DEG C 7.2 :
: DEW POINT DEG C -6.7 : DEW POINT DEG C -5.6 : DEW POINT DEG C -5.0 :
: VISIBILITY (MI) 20 : VISIBILITY (MI) 20 : VISIBILITY (MI) 20 :
: LOW MID 1 HI TOTAL 1:LOW MID 1 HI TOTAL 1:LOW MID 1 HI TOTAL 8:
: CLD (TENTHS) :LOW MID 2135 HI :LOW MID 2135 HI :LOW MID 2135 HI 5485 :
: EXPONENTS : A= -.56 B=-1.08 P=.35 : A= .19 B= .48 P=.43 : A= -.34 B= .38 P=.30 :
: NET RADIATION : -6.83 MW/CM2 : -5.44 MW/CM2 : -7.26 MW/CM2 :
: RICHARDSON NO.: (4M) .24 (8M) .51 (16M) .86 : (4M) 1.06 (8M) 1.98 (16M) 2.90 : (4M) .31 (8M) .71 (16M) 1.37 :
: (1/L)*10 : (39.192M) 1.75 (OBSERVED DATA): (39.192M) 1.09 (OBSERVED DATA): (39.192M) .17 (OBSERVED DATA):
: USTAR : (4M) 2.75 (8M) 5.51 (16M) 7.49: (4M) 4.43 (8M) 76.26 (16M) 80.85: (4M) 4.29 (8M) 10.36 (16M) 18.50:
: : (4M) .1158 (8M) .0934 (16M) .0814: (4M) .0120 (8M) .0095 (16M) .0091: (4M) .0820 (8M) .0583 (16M) .0432:

```

```

: WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE :
: HEIGHT (M) : (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) :
: 1. : 7.67 : 325. : 7.09 : 176. : 5.39 :
: 2. : 99. : 2.04 8.04 5.8 : 58 7.69 54.7 : 176. : 1.48 5.60 10.1 :
: 4. : 97. : 2.68 8.14 5.0 : 66 8.15 2.3 : 172. : 2.11 5.69 8.8 :
: 8. : 97. : 3.60 9.48 4.2 : 91 9.27 49.6 : 171. : 3.04 6.70 6.1 :
: 16. : 104. : 4.79 11.99 3.0 : 117 9.56 37.4 : 179. : 4.33 8.02 3.2 :
: 32. : 100. : 5.94 14.37 .9 : 172 10.07 30.2 : 166. : 4.67 9.53 3.5 :
: 48. : 99. : 5.71 14.38 1.4 : 228 10.53 28.2 : 160. : 3.20 10.02 4.4 :

```

LEAST SQUARES FITTED DATA

```

: WS TEMP SIGA SIGE : WS TEMP SIGA SIGE : WS TEMP SIGA SIGE :
: HEIGHT (M) : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) :
: 1.0 : 1.68 7.46 10.4 29.8 : 39 7.58 15.4 1.3 : 1.42 5.31 12.3 :
: 2.0 : 2.14 7.81 7.1 14.1 : 52 7.74 17.6 1.8 : 1.75 5.52 9.7 :
: 4.0 : 2.72 8.50 4.8 6.7 : 70 8.05 20.0 2.5 : 2.16 5.92 7.7 :
: 8.0 : 3.46 9.75 3.3 3.2 : 95 8.61 22.8 3.4 : 2.66 6.67 6.1 :
: 16.0 : 4.40 11.84 2.2 1.5 : 128 9.52 25.9 4.7 : 3.28 7.94 4.8 :
: 32.0 : 5.60 14.29 1.5 .7 : 173 10.50 29.5 6.6 : 4.05 9.57 3.8 :
: 48.0 : 6.44 14.42 1.2 .5 : 206 10.36 31.9 8.0 : 4.58 10.01 3.3 :
: DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI :
: 4.0 : .2203 .3338 2.511 .00 : .0715 .1549 17.439 .00 : .1518 .2012 2.420 .00 :
: 8.0 : .1401 .2888 5.346 .00 : .0483 .1329 32.767 .00 : .0936 .1778 5.613 .00 :
: 16.0 : .0891 .1988 9.031 .00 : .0326 .0889 47.963 .00 : .0577 .1310 10.834 .00 :
: 39.2* : -.0144 .0106 1.633 .00 : .0350 .0388 52.932 .00 : -.0919 .0406 13.446 .00 :

```

* OBSERVED DATA

| | DATE 07/04/77 | TIME 04:00:00 | DATE 07/04/77 | TIME 05:00:00 | DATE 07/04/77 | TIME 06:00:00 | | | | | | | |
|----------------|-----------------|-----------------------|-----------------|---------------------|-----------------|---------------------|-------------|----------|------------|------------|-------------|-------|------|
| | WEATHER | | WEATHER | | WEATHER | | | | | | | | |
| | TEMP DEG C | 6.7 | TEMP DEG C | 6.1 | TEMP DEG C | 6.7 | | | | | | | |
| | DEW POINT DEG C | -6.1 | DEW POINT DEG C | -6.1 | DEW POINT DEG C | -6.1 | | | | | | | |
| | VISIBILITY (MI) | 20 | VISIBILITY (MI) | 20 | VISIBILITY (MI) | 50 | | | | | | | |
| CLD (TENTHS) | LOW | 1 HI 7 TOTL | 8:LOW | MID 4 HI TOTL | 4:LOW | MID 5 HI 3 TOTL | | | | | | | |
| CLD HT (M) | LOW | MID 2135 HI 5485 | LOW | MID 2135 HI | LOW | MID 3050 HI 6095 | | | | | | | |
| EXPONENTS | A= | -30 B= -.46 P= .39 | A= | -10 B= .51 P= .22 | A= | -66 B= -.23 P= .33 | | | | | | | |
| NET RADIATION | | -6.83 MW/CM2 | | -6.14 MW/CM2 | | -4.61 MW/CM2 | | | | | | | |
| RICHARDSON NO. | (4M) | .13 (8M) | .30(16M) | .62 | (4M) | .58 (8M) | 1.39(16M) | 2.26 | (4M) | .27 (8M) | .59(16M) | 1.03 | |
| | (39.192M) | 14.19 (OBSERVED DATA) | (39.192M) | .75 (OBSERVED DATA) | (39.192M) | .42 (OBSERVED DATA) | | | | | | | |
| (L/L) #10 | (4M) | 1.00 (8M) | 2.01 (16M) | 4.00 | (4M) | 14.06 (8M) | 37.96 (16M) | 49.29 | (4M) | 3.35 (8M) | 7.15 (16M) | 10.63 | |
| USTAR | (4M) | .1282 (8M) | .1138 (16M) | .0948 | (4M) | .0537 (8M) | .0319 (16M) | .0244 | (4M) | .0853 (8M) | .0658 (16M) | .0544 | |
| HEIGHT (M) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | | | |
| 1. | | | 4.41 | | | | | | | | | | |
| 2. | 168. | 1.79 | 4.58 | 7.4 | | 165. | 1.46 | 4.54 | 4.9 | | 190. | 3.83 | 43.9 |
| 4. | 165. | 2.39 | 4.60 | 6.1 | | 161. | 2.23 | 5.48 | 4.6 | | 180. | 4.17 | 41.2 |
| 8. | 162. | 3.21 | 5.33 | 4.3 | 2.4 | 156. | 2.83 | 6.63 | 3.4 | .8 | 169. | 5.51 | 35.5 |
| 16. | 168. | 4.58 | 6.25 | 3.6 | 1.3 | 159. | 3.02 | 6.97 | 3.1 | 1.3 | 164. | 6.56 | 29.7 |
| 32. | 156. | 5.82 | 9.48 | 3.4 | .8 | 153. | 3.02 | 6.95 | 3.5 | 1.9 | 139. | 7.36 | 11.5 |
| 48. | 147. | 5.60 | 10.56 | 2.8 | 1.2 | 147. | 3.28 | 6.88 | 3.8 | 2.1 | 130. | 8.10 | 4.5 |

| HEIGHT (M) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : |
|--------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|-----------------|
| 1.0 : | 1.42 : | 4.22 : | 8.8 : | 5.5 : | 1.50 : | 4.58 : | 4.9 : | .3 : | 1.33 : | 3.71 : | 101.9 : | 5.8 : |
| 2.0 : | 1.86 : | 4.40 : | 7.2 : | 4.0 : | 1.75 : | 4.78 : | 4.5 : | .4 : | 1.67 : | 3.92 : | 64.7 : | 4.9 : |
| 4.0 : | 2.43 : | 4.75 : | 5.8 : | 2.9 : | 2.04 : | 5.15 : | 4.2 : | .6 : | 2.11 : | 4.32 : | 41.1 : | 4.2 : |
| 8.0 : | 3.18 : | 5.43 : | 4.8 : | 2.1 : | 2.39 : | 5.82 : | 3.9 : | .9 : | 2.65 : | 5.07 : | 26.1 : | 3.6 : |
| 16.0 : | 4.15 : | 6.71 : | 3.9 : | 1.5 : | 2.79 : | 6.84 : | 3.7 : | 1.3 : | 3.34 : | 6.31 : | 16.6 : | 3.0 : |
| 32.0 : | 5.43 : | 8.95 : | 3.2 : | 1.1 : | 3.25 : | 7.59 : | 3.4 : | 1.8 : | 4.21 : | 7.80 : | 10.5 : | 2.6 : |
| 48.0 : | 6.35 : | 10.74 : | 2.8 : | .9 : | 3.56 : | 6.63 : | 3.3 : | 2.2 : | 4.82 : | 7.94 : | 8.1 : | 2.4 : |
| ----- | | | | | | | | | | | | |
| : | DU/DZ : | DTH/DZ : | BU*100 : | RI : | DU/DZ : | DTH/DZ : | BU*100 : | RI : | DU/DZ : | DTH/DZ : | BU*100 : | RI : |
| 4.0 : | .2197 : | .1823 : | 1.744 : | .00 : | .1058 : | .1843 : | 2.483 : | .00 : | .1634 : | .2022 : | 2.577 : | .00 : |
| 8.0 : | .1437 : | .1737 : | 3.878 : | .00 : | .0617 : | .1508 : | 5.952 : | .00 : | .1029 : | .1760 : | 5.642 : | .00 : |
| 16.0 : | .0939 : | .1565 : | 8.134 : | .00 : | .0360 : | .0838 : | 9.677 : | .00 : | .0648 : | .1237 : | 9.951 : | .00 : |
| 39.2* : | -.0138 : | .0775 : | 12.588 : | .00 : | .0163 : | .0056 : | 3.072 : | .00 : | .0681 : | .0543 : | 15.431 : | .00 : |

| | : DATE | 07/04/77 | TIME | 07:00:00 | : | DATE | 07/04/77 | TIME | 08:00:00 | : | DATE | 07/04/77 | TIME | 09:00:00 | : |
|-----------------|--------|-----------------|-------------|------------------|----------------|------|-----------------|-------------|------------------|----------------|-------|-----------------|--------------|---------------------|-------------|
| | : | WEATHER | : | : | : | : | WEATHER | : | : | : | : | WEATHER | : | : | : |
| | : | TEMP DEG C | : | 6.1 | : | : | TEMP DEG C | : | 12.8 | : | : | TEMP DEG C | : | 15.6 | : |
| | : | DEW POINT DEG C | : | -5.6 | : | : | DEW POINT DEG C | : | -5.0 | : | : | DEW POINT DEG C | : | -3.9 | : |
| | : | VISIBILITY (MI) | : | 85 | : | : | VISIBILITY (MI) | : | 85 | : | : | VISIBILITY (MI) | : | 85 | : |
| | : | LOW | MID | 5 HI | TOTAL | : | 5:LOW | MID | 5 HI | TOTAL | : | 5:LOW | MID | 6 HI | TOTAL |
| CLD (TENTHS) | : | LOW | MID | 5 HI | TOTAL | : | 5:LOW | MID | 5 HI | TOTAL | : | 5:LOW | MID | 6 HI | TOTAL |
| CLD HT (M) | : | LOW | MID | 3050 HI | | : | LOW | MID | 4270 HI | | : | LOW | MID | 3660 HI | |
| EXPONENTS | : | A= | .05 | B= | 1.05 P=.21 | : | A= | .06 | B=-.44 P=.14 | : | A= | .00 | B=.15 P=.11 | : | |
| NET RADIATION : | : | | 1.04 MW/CM2 | | | : | | 7.18 MW/CM2 | | | : | | 27.21 MW/CM2 | | |
| RICHARDSON NO. | : | (4M) | 2.18 | (8M) | 5.98(16M)14.48 | : | (4M) | -.12 | (8M) | -.15(16M) 1.21 | : | (4M) | -.76 | (8M)-2.28(16M)-5.45 | : |
| | : | (39.192M) | -67 | (OBSERVED DATA): | (39.192M) 6.64 | : | (39.192M) | 6.64 | (OBSERVED DATA): | (39.192M)***** | : | (39.192M) | ***** | (OBSERVED DATA): | : |
| (L/L)*10 | : | (4M)***** | (8M)***** | (16M)*****: | (4M) -.36 | : | (4M) | -.36 | (8M) | -.21 | : | (4M) | -2.05 | (8M)-3.02 | : |
| USTAR | : | (4M).0076 | (8M).0035 | (16M).0017: | (4M).2102 | : | (4M). | 2102 | (8M).2016 | : | (4M). | 1126 | (8M).1177 | : | (16M).1221: |

| HEIGHT (M) | WD :(DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|--------------|-------------|-------------|---------------|---------------|-------------|-------------|-------------|---------------|---------------|-------------|-------------|-------------|---------------|---------------|
| 1. | : | | 6.18 | | : | | | 8.52 | | : | | | 12.83 | | : |
| 2. | : | 60. | 6.33 | 15.0 | : | 73. | 2.36 | 8.46 | 6.7 | : | 35. | 1.08 | 12.70 | 19.5 | : |
| 4. | : | 49. | 6.59 | 9.9 | : | 68. | 2.61 | 8.19 | 6.3 | : | 28. | 1.18 | 12.46 | 18.0 | : |
| 8. | : | 28. | 7.32 | 6.4 | : | 9. | 2.80 | 8.34 | 6.1 | : | 4.2: | 1.27 | 12.49 | 17.3 | 16.7: |
| 16. | : | 19. | 7.57 | 13.6 | : | 65. | 2.97 | 8.19 | 5.6 | : | 17. | 1.35 | 12.27 | 19.6 | 17.1: |
| 32. | : | 322. | 8.12 | 29.9 | : | 63. | 3.46 | 8.47 | 4.0 | : | 9. | 1.48 | 12.06 | 19.9 | 19.6: |
| 48. | : | 324. | 8.87 | 7.7 | : | 48. | 3.82 | 9.86 | 13.3 | : | 1.9: | 1.52 | 11.78 | 17.8 | 22.0: |

| HEIGHT (M) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | SIGA (DEG) : | SIGE (DEG) : |
|--------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|-----------------|
| 1.0 : | .61 : | 6.37 : | 10.6 : | .1 : | 2.11 : | 8.49 : | 5.6 : | 11.5 : | 1.01 : | 12.71 : | 18.6 : | 11.7 : |
| 2.0 : | .71 : | 6.46 : | 11.0 : | .2 : | 2.33 : | 8.44 : | 5.9 : | 8.5 : | 1.09 : | 12.67 : | 18.6 : | 13.1 : |
| 4.0 : | .81 : | 6.63 : | 11.4 : | .4 : | 2.57 : | 8.36 : | 6.1 : | 6.3 : | 1.17 : | 12.61 : | 18.6 : | 14.5 : |
| 8.0 : | .94 : | 6.96 : | 11.8 : | .8 : | 2.84 : | 8.23 : | 6.4 : | 4.6 : | 1.26 : | 12.50 : | 18.6 : | 16.1 : |
| 16.0 : | 1.08 : | 7.53 : | 12.2 : | 1.6 : | 3.14 : | 8.12 : | 6.7 : | 3.4 : | 1.36 : | 12.30 : | 18.7 : | 18.0 : |
| 32.0 : | 1.25 : | 8.37 : | 12.7 : | 3.4 : | 3.46 : | 8.55 : | 7.0 : | 2.5 : | 1.47 : | 11.99 : | 18.7 : | 20.0 : |
| 48.0 : | 1.36 : | 8.78 : | 12.9 : | 5.2 : | 3.67 : | 9.83 : | 7.1 : | 2.1 : | 1.53 : | 11.81 : | 18.7 : | 21.2 : |

| | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI |
|-------|-------|--------|---------|-----|-------|--------|--------|------|-------|--------|---------|---------|
| 4.0 | .0387 | .0936 | 7.917 | .00 | .0855 | -.0260 | -.220 | -.06 | .0292 | -.0190 | -.758 | -.24 |
| 8.0 | .0223 | .0853 | 21.687 | .00 | .0472 | -.0095 | -.262 | -.15 | .0157 | -.0164 | -2.263 | -1.93 |
| 16.0 | .0129 | .0687 | 52.470 | .00 | .0261 | .0236 | 2.142 | .00 | .0085 | -.0114 | -5.404 | -11.99 |
| 39.2* | .0544 | .0569 | 154.861 | .00 | .0225 | .0969 | 39.383 | .00 | .0025 | -.0075 | -17.646 | -123.86 |

A-191

OBSERVED DATA

| | DATE 07/04/77 | TIME 10:00:00 | DATE 07/04/77 | TIME 11:00:00 | DATE 07/04/77 | TIME 12:00:00 | |
|----------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-------|
| | WEATHER | | WEATHER | | WEATHER | | |
| CLD (TENTHS) | TEMP DEG C | 18.0 | TEMP DEG C | 22.2 | TEMP DEG C | 23.5 | |
| CLD HT (M) | DEW POINT DEG C | -3.3 | DEW POINT DEG C | -5.0 | DEW POINT DEG C | -4.7 | |
| EXONENTS | VISIBILITY (MI) | 85 | VISIBILITY (MI) | 85 | VISIBILITY (MI) | 85 | |
| NET RADIATION | LOW MID 3 HI | TOTL | LOW MID 3 HI | TOTL | LOW MID 3 HI | TOTL | |
| RICHARDSON NO. | LOW MID 3660 HI | | LOW MID 3660 HI | | LOW MID 3050 HI | | |
| | A = -.26 B = .11 P = .09 | | A = -.19 B = .17 P = .10 | | A = -.01 B = .03 P = .13 | | |
| | 34.82 MW/CM2 | | 42.43 MW/CM2 | | 36.28 MW/CM2 | | |
| (L/L)*10 | (4M)-1.40 (8M)-4.31(16M)***** | | (4M) -.90 (8M)-2.61(16M)-5.50 | | (4M) -.41 (8M)-1.07(16M)-1.68 | | |
| USTAR | (39.192M)***** (OBSERVED DATA): | | (39.192M)-3.51 (OBSERVED DATA): | | (39.192M)42.77 (OBSERVED DATA): | | |
| | (4M)-3.73 (8M)-5.67 (16M)***** | | (4M)-2.40 (8M)-3.44 (16M)-3.61 | | (4M)-1.11 (8M)-1.43 (16M)-1.11 | | |
| | (4M).1239 (8M).1305 (16M).1569 | | (4M).2354 (8M).2447 (16M).2475 | | (4M).1696 (8M).1739 (16M).1715 | | |
| HEIGHT (M) | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | WD WS TEMP SIGA SIGE | |
| | (DEG) (M/S) (C) (DEG) (DEG) (DEG) | (DEG) (M/S) (C) (DEG) (DEG) (DEG) | (DEG) (M/S) (C) (DEG) (DEG) (DEG) | (DEG) (M/S) (C) (DEG) (DEG) (DEG) | (DEG) (M/S) (C) (DEG) (DEG) (DEG) | (DEG) (M/S) (C) (DEG) (DEG) (DEG) | |
| 1. | 15.49 | 15.34 | 43.1 | 19.96 | 19.77 | 22.3 | 20.94 |
| 2. | 32. | 1.12 | 15.34 | 188. | 2.19 | 19.77 | 227. |
| 4. | 24. | 1.18 | 14.97 | 183. | 2.41 | 19.28 | 220. |
| 8. | 22. | 1.25 | 15.02 | 23.6 | 2.64 | 18.80 | 11.2 |
| 16. | 35. | 1.32 | 14.88 | 26.7 | 2.80 | 18.47 | 12.4 |
| 32. | 24. | 1.41 | 14.60 | 21.4 | 2.91 | 18.09 | 14.2 |
| 48. | 21. | 1.47 | 14.32 | 21.8 | 3.04 | 17.82 | 15.2 |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WS | TEMP | SIGA | SIGE | WS | TEMP | SIGA | SIGE | WS | TEMP | SIGA | SIGE |
|------------|-------|--------|---------|---------|-------|--------|--------|--------|-------|--------|--------|-------|
| | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) |
| 1.0 | 1.05 | 15.31 | 59.0 | 18.9 | 2.09 | 19.74 | 27.0 | 7.8 | 1.59 | 20.97 | 27.2 | 15.4 |
| 2.0 | 1.11 | 15.28 | 49.3 | 20.4 | 2.24 | 19.64 | 23.8 | 8.8 | 1.73 | 20.91 | 27.0 | 15.7 |
| 4.0 | 1.18 | 15.21 | 41.2 | 22.1 | 2.40 | 19.45 | 20.9 | 9.9 | 1.90 | 20.81 | 26.9 | 16.0 |
| 8.0 | 1.25 | 15.08 | 34.4 | 23.8 | 2.57 | 19.09 | 18.4 | 11.2 | 2.07 | 20.62 | 26.7 | 16.3 |
| 16.0 | 1.33 | 14.86 | 28.8 | 25.7 | 2.75 | 18.51 | 16.2 | 12.6 | 2.27 | 20.32 | 26.5 | 16.6 |
| 32.0 | 1.41 | 14.53 | 24.1 | 27.7 | 2.95 | 17.86 | 14.2 | 14.1 | 2.48 | 20.04 | 26.3 | 17.0 |
| 48.0 | 1.46 | 14.35 | 21.7 | 29.0 | 3.07 | 17.91 | 13.2 | 15.1 | 2.61 | 20.17 | 26.2 | 17.2 |
| | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI |
| 4.0 | .0233 | -.0224 | -.871 | -.25 | .0553 | -.0818 | -.762 | -.24 | .0564 | -.0387 | -.574 | -.20 |
| 8.0 | .0123 | -.0193 | -2.673 | -1.71 | .0296 | -.0683 | -2.217 | -1.72 | .0309 | -.0306 | -1.519 | -1.35 |
| 16.0 | .0065 | -.0132 | -6.494 | -6.05 | .0159 | -.0412 | -4.667 | -9.28 | .0169 | -.0143 | -2.302 | -4.43 |
| 39.2* | .0038 | -.0075 | -19.007 | -143.97 | .0081 | -.0069 | -4.034 | -19.42 | .0031 | .0125 | 10.003 | .00 |

* OBSERVED DATA

RESERVED DATA

| | DATE 07/04/77 | TIME 16:00:00 | DATE 07/04/77 | TIME 17:00:00 | DATE 07/04/77 | TIME 18:00:00 | | | | | | | | | | | | | | |
|---------------|-----------------|---------------|-----------------|---------------|-----------------|-----------------|-----------|----------|-----------------|------------|----------|-----------------|-----------|------------|------------|-------|-------|-------|-------|-------|
| | WEATHER | | WEATHER | | WEATHER | | | | | | | | | | | | | | | |
| | TEMP DEG C | 25.2 | TEMP DEG C | 25.0 | TEMP DEG C | 24.4 | | | | | | | | | | | | | | |
| | DEW POINT DEG C | -5.6 | DEW POINT DEG C | -5.0 | DEW POINT DEG C | -6.7 | | | | | | | | | | | | | | |
| | VISIBILITY (MI) | 85 | VISIBILITY (MI) | 85 | VISIBILITY (MI) | 85 | | | | | | | | | | | | | | |
| CLD (TENTHS) | LOW | 4 MID | 4 HI | TOTAL | 8:LOW | 3 MID | 5 HI | TOTAL | 8 | | | | | | | | | | | |
| CLD HT (M) | LOW | 1330 | MID | 2440 | HI | LOW | 1830 | MID | 3050 | HI | | | | | | | | | | |
| EXPONENTS | A = | -0.02 | B = | .22 | P = | .06 | A = | -0.21 | B = | .14 | P = | .08 | | | | | | | | |
| NET RADIATION | | | | 10.88 MW/CM2 | | | | | 10.69 MW/CM2 | | | | | | | | | | | |
| RICHARDSN NO. | (4M) | -0.57 | (8M) | -1.77 | (16M) | -4.16 | (4M) | -0.09 | (8M) | -0.28 | (16M) | -0.71 | (4M) | .02 | (8M) | .06 | (16M) | .08 | | |
| | (39.192M) | -5.53 | (OBSERVED DATA) | (39.192M) | ***** | (OBSERVED DATA) | (39.192M) | -2.12 | (OBSERVED DATA) | (39.192M) | -2.12 | (OBSERVED DATA) | (39.192M) | -0.47 | (4M) | .07 | (8M) | .13 | (16M) | .12 |
| (1/LI)*10 | (4M) | -1.53 | (8M) | -2.34 | (16M) | -2.74 | (4M) | -0.27 | (8M) | -0.39 | (16M) | -0.47 | (4M) | .07 | (8M) | .13 | (16M) | .13 | (16M) | .12 |
| USTAR | (4M) | .2715 | (8M) | .2738 | (16M) | .2731 | (4M) | .2200 | (8M) | .2136 | (16M) | .2111 | (4M) | .1924 | (8M) | .1693 | (16M) | .1693 | (16M) | .1620 |
| HEIGHT (M) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | | | | | |
| 1. | | | 23.38 | | | | | 23.06 | | | | | 22.61 | | | | | | | |
| 2. | 10. | 2.71 | 23.21 | 19.1 | | 21. | 2.48 | 23.00 | 19.9 | | 84. | 2.40 | 22.66 | 14.9 | | | | | | |
| 4. | 6. | 2.96 | 22.20 | 18.6 | | 16. | 2.76 | 21.95 | 18.2 | | 80. | 2.75 | 21.80 | 13.7 | | | | | | |
| 8. | 358. | 3.14 | 22.71 | 18.5 | 8.4: | 9. | 3.00 | 22.61 | 14.7 | 6.9: | 74. | 3.06 | 22.46 | 13.2 | 4.5: | | | | | |
| 16. | 4. | 3.29 | 22.55 | 18.1 | 8.9: | 14. | 3.16 | 22.61 | 13.4 | 7.4: | 79. | 3.31 | 22.41 | 11.9 | 4.1: | | | | | |
| 32. | 7. | 3.36 | 22.27 | 19.8 | 10.5: | 14. | 3.21 | 22.33 | 11.0 | 8.0: | 79. | 3.74 | 22.22 | 11.1 | 3.8: | | | | | |
| 48. | 7. | 3.24 | 21.96 | 17.0 | 12.6: | 15. | 3.23 | 22.07 | 10.7 | 9.0: | 80. | 3.89 | 21.97 | 10.6 | 3.6: | | | | | |

LEAST SQUARES FITTED DATA

| HEIGHT (M) : | WS (M/S) : | TEMP (C) : | STGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | STGA (DEG) : | SIGE (DEG) : | WS (M/S) : | TEMP (C) : | STGA (DEG) : | SIGE (DEG) : |
|--------------|------------|------------|--------------|--------------|------------|------------|--------------|--------------|------------|------------|--------------|--------------|
| 1.0 : | 2.70 : | 23.01 : | 19.2 : | 5.1 : | 2.44 : | 22.74 : | 23.4 : | 5.1 : | 2.20 : | 22.41 : | 16.1 : | 5.8 : |
| 2.0 : | 2.81 : | 22.97 : | 19.0 : | 5.9 : | 2.58 : | 22.72 : | 20.2 : | 5.6 : | 2.44 : | 22.41 : | 15.0 : | 5.3 : |
| 4.0 : | 2.93 : | 22.89 : | 18.8 : | 6.9 : | 2.73 : | 22.69 : | 17.5 : | 6.2 : | 2.71 : | 22.40 : | 13.9 : | 4.9 : |
| 8.0 : | 3.05 : | 22.75 : | 18.6 : | 8.1 : | 2.89 : | 22.62 : | 15.2 : | 6.8 : | 3.01 : | 22.38 : | 12.9 : | 4.5 : |
| 16.0 : | 3.18 : | 22.49 : | 18.4 : | 9.4 : | 3.06 : | 22.49 : | 13.1 : | 7.5 : | 3.34 : | 22.34 : | 11.9 : | 4.1 : |
| 32.0 : | 3.32 : | 22.14 : | 18.2 : | 10.9 : | 3.23 : | 22.27 : | 11.4 : | 8.3 : | 3.71 : | 22.20 : | 11.1 : | 3.8 : |
| 48.0 : | 3.40 : | 22.02 : | 18.1 : | 12.0 : | 3.34 : | 22.10 : | 10.5 : | 8.7 : | 3.94 : | 21.99 : | 10.6 : | 3.6 : |
| ----- | | | | | | | | | | | | |
| : | DU/DZ : | DTH/DZ : | BU*100 : | RI : | DU/DZ : | DTH/DZ : | BU*100 : | RI : | DU/DZ : | DTH/DZ : | BU*100 : | RI : |
| ----- | | | | | | | | | | | | |
| 4.0 : | .0403 : | -.0279 : | -.172 : | -.05 : | .0513 : | -.0073 : | -.052 : | .00 : | .0942 : | .0059 : | .043 : | .00 : |
| 8.0 : | .0210 : | -.0236 : | -.537 : | -.15 : | .0271 : | -.0063 : | -.161 : | -.07 : | .0523 : | .0046 : | .108 : | .00 : |
| 16.0 : | .0110 : | -.0151 : | -1.262 : | -.90 : | .0144 : | -.0044 : | -.398 : | -.19 : | .0290 : | .0021 : | .159 : | .00 : |
| 39.2* : | -.0075 : | -.0094 : | -4.372 : | -17.92 : | .0013 : | -.0062 : | -3.074 : | -3.81 : | .0094 : | -.0056 : | -1.978 : | -5.60 : |

* OBSERVED DATA

OBSERVED DATA

```

: DATE 07/04/77 TIME 22:00:00 : DATE 07/04/77 TIME 23:00:00 : DATE 08/04/77 TIME 00:00:00 :
: WEATHER : WEATHER : WEATHER :
: TEMP DEG C 12.2 : TEMP DEG C 13.3 : TEMP DEG C 13.9 :
: DEW POINT DEG C -7.2 : DEW POINT DEG C -7.2 : DEW POINT DEG C -7.8 :
: VISIBILITY (MI) 20 : VISIBILITY (MI) 20 : VISIBILITY (MI) 20 :
: LOW MID 7 HI TOTAL 7:LOW MID 7 HI TOTAL 7:LOW MID 7 HI TOTAL 7:
: CLD (TENTHS) : CLD (TENTHS) : CLD (TENTHS) :
: CLD HT (M) : CLD HT (M) : CLD HT (M) :
: EXPONENTS : EXPONENTS : EXPONENTS :
: NET RADIATION : NET RADIATION : NET RADIATION :
: RICHARDSON N1.: RICHARDSON N1.: RICHARDSON N1.:
: (1/L1)*10 : (1/L1)*10 : (1/L1)*10 :
: USTAR : USTAR : USTAR :

```

```

: WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE :
: (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) :
: 1. : 8.81 : 9.82 : 10.96 :
: 2. : 144. : 92. : 144. :
: 4. : 137. : 91. : 141. :
: 8. : 128. : 92. : 143. :
: 16. : 129. : 107. : 153. :
: 32. : 140. : 131. : 155. :
: 48. : 144. : 140. : 155. :

```

LEAST SQUARES FITTED DATA

```

: WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE :
: (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) :
: 1.0 : 1.03 8.95 21.2 .7 : 2.07 9.99 5.9 4.0 : 1.85 11.04 14.3 7.7 :
: 2.0 : 1.41 9.18 15.8 .9 : 2.58 10.23 5.5 3.5 : 2.50 11.33 9.9 5.4 :
: 4.0 : 1.94 9.63 11.8 1.1 : 3.21 10.72 5.1 3.1 : 3.38 11.87 6.9 3.8 :
: 8.0 : 2.65 10.49 8.7 1.3 : 3.99 11.63 4.7 2.7 : 4.56 12.89 4.8 2.7 :
: 16.0 : 3.64 12.06 6.5 1.6 : 4.97 13.22 4.4 2.4 : 6.16 14.60 3.3 1.9 :
: 32.0 : 4.99 14.65 4.8 1.9 : 6.18 15.55 4.1 2.1 : 8.32 16.79 2.3 1.4 :
: 48.0 : 6.01 16.49 4.1 2.2 : 7.02 16.71 3.9 1.9 : 9.92 17.32 1.9 1.1 :
: DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI :
: 4.0 : .2072 .2276 3.370 .00 : .2355 .2418 1.297 .00 : .3433 .2698 1.301 .00 :
: 8.0 : .1421 .2129 6.683 .00 : .1465 .2191 3.028 .00 : .2318 .2374 2.503 .00 :
: 16.0 : .0975 .1836 12.187 .00 : .0911 .1736 6.166 .00 : .1565 .1727 3.969 .00 :
: 39.2* : .1187 .1331 22.508 .00 : .0938 .0969 11.354 .00 : .0794 .0587 3.688 .00 :

```

* OBSERVED DATA

OBSERVED DATA

| | | | | | | | | | | | | | | | | | | | | |
|----------------|-----------------|---------------|-----------------|---------------|-----------------|-----------------|-----------|-------|-----------------|-----------|-------|-----------------|-----------|-------|-----------------|-----------|-------|-------|-------|-------|
| | DATE 08/04/77 | TIME 01:00:00 | DATE 08/04/77 | TIME 02:00:00 | DATE 08/04/77 | TIME 03:00:00 | | | | | | | | | | | | | | |
| | WEATHER | | WEATHER | | WEATHER | | | | | | | | | | | | | | | |
| | TEMP DEG C | 15.6 | TEMP DEG C | 15.6 | TEMP DEG C | 12.2 | | | | | | | | | | | | | | |
| | DEW POINT DEG C | -7.8 | DEW POINT DEG C | -7.8 | DEW POINT DEG C | -8.3 | | | | | | | | | | | | | | |
| | VISIBILITY (MI) | 20 | VISIBILITY (MI) | 20 | VISIBILITY (MI) | 20 | | | | | | | | | | | | | | |
| CLD (TENTHS) | LOW | MID | 6 HI | TOTL | 6:LOW | MID | 5 HI | TOTL | 0 | | | | | | | | | | | |
| CLD HT (M) | LOW | MID | 3050 HI | | LOW | MID | 3050 HI | | | | | | | | | | | | | |
| EXPONENTS | A = | -58 | B = | -78 | P = | .49 | A = | .05 | B = | .31 | P = | .21 | | | | | | | | |
| NET RADIATION | | | | | | | | | | | | | | | | | | | | |
| RICHARDSON NO. | (4M) | .06 | (8M) | .11(16M) | .21 | (4M) | .10* | (8M) | .24* | (16M) | 2.38 | (4M) | .31 | (8M) | .75(16M) | 1.35 | | | | |
| | (39.192M) | .62 | (OBSERVED DATA) | (39.192M) | .90 | (OBSERVED DATA) | (39.192M) | .62 | (OBSERVED DATA) | (39.192M) | .62 | (OBSERVED DATA) | (39.192M) | .62 | (OBSERVED DATA) | (39.192M) | | | | |
| (1/L)*10 | (4M) | .26 | (8M) | .37 | (16M) | .55 | (4M) | .63* | (8M) | 1.37* | (16M) | 54.47 | (4M) | 4.29 | (8M) | 11.54 | (16M) | 17.97 | | |
| USTAR | (4M) | .1500 | (8M) | .1671 | (16M) | .1787 | (4M) | .1877 | (8M) | .1743 | (16M) | .0373 | (4M) | .1233 | (8M) | .0805 | (16M) | .0593 | | |
| HEIGHT (M) | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE | WD | WS | TEMP | SIGA | SIGE |
| | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) |
| 1. | | | 11.42 | | | | | 9.98 | | | | | 8.25 | | | | | | | |
| 2. | 164. | 1.80 | 11.83 | 16.0 | | 137. | 2.46 | 10.43 | 6.4 | | 98. | 2.61 | 8.79 | 5.1 | | | | | | |
| 4. | 160. | 2.32 | 11.82 | 13.8 | | 132. | 3.29 | 10.75 | 4.7 | | 96. | 3.43 | 9.37 | 4.0 | | | | | | |
| 8. | 157. | 3.12 | 12.66 | 10.9 | 5.8 | 129. | 4.44 | 12.27 | 3.1 | 2.2 | 94. | 4.12 | 11.20 | 3.9 | 2.2 | | | | | |
| 16. | 162. | 4.51 | 13.32 | 7.2 | 4.9 | 140. | 5.90 | 14.59 | 2.1 | 1.0 | 106. | 4.30 | 12.01 | 4.7 | 2.8 | | | | | |
| 32. | 160. | 6.89 | 14.70 | 3.1 | 2.1 | 151. | 4.94 | 16.49 | 6.2 | 2.2 | 113. | 5.14 | 12.72 | 5.3 | 2.1 | | | | | |
| 48. | 162. | 8.14 | 16.33 | 3.0 | 1.6 | 161. | 4.48 | 16.68 | 7.7 | 3.3 | 122. | 5.62 | 12.82 | 4.4 | 2.4 | | | | | |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WS | TEMP | SIGA | SIGE | WS | TEMP | SIGA | SIGE | WS | TEMP | SIGA | SIGE |
|------------|-------|-------|--------|-------|--------|-------|--------|-------|-------|-------|--------|-------|
| | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) |
| 1.0 | 1.21 | 11.60 | 29.3 | 33.1 | 2.51 | 9.96 | 4.1 | .8 | 2.39 | 8.65 | 4.4 | 2.5 |
| 2.0 | 1.69 | 11.72 | 19.6 | 19.3 | 2.90 | 10.32 | 4.3 | 1.0 | 2.80 | 8.92 | 4.5 | 2.5 |
| 4.0 | 2.37 | 11.95 | 13.1 | 11.3 | 3.34 | 11.01 | 4.4 | 1.2 | 3.27 | 9.44 | 4.5 | 2.4 |
| 8.0 | 3.33 | 12.40 | 8.8 | 6.6 | 3.85 | 12.27 | 4.5 | 1.5 | 3.81 | 10.38 | 4.5 | 2.4 |
| 16.0 | 4.68 | 13.27 | 5.9 | 3.8 | 4.44 | 14.34 | 4.7 | 1.8 | 4.45 | 11.87 | 4.5 | 2.4 |
| 32.0 | 6.57 | 14.87 | 3.9 | 2.2 | 5.11 | 16.68 | 4.8 | 2.3 | 5.20 | 13.28 | 4.6 | 2.4 |
| 48.0 | 8.01 | 16.27 | 3.1 | 1.6 | 5.56 | 16.62 | 4.9 | 2.6 | 5.69 | 12.61 | 4.6 | 2.4 |
| | DU/DZ | DT/DZ | BU*100 | RI | DU/DZ | DT/DZ | BU*100 | RI | DU/DZ | DT/DZ | BU*100 | RI |
| 4.0 | .2736 | .1240 | 1.210 | .00 | .1587 | .3345 | 1.656 | .00 | .1693 | .2533 | 1.318 | .00 |
| 8.0 | .1920 | .1202 | 2.377 | .00 | .0915 | .2877 | 4.267 | .00 | .0988 | .2125 | 3.234 | .00 |
| 16.0 | .1348 | .1127 | 4.507 | .00 | .0527 | .1939 | 8.597 | .00 | .0577 | .1309 | 5.814 | .00 |
| 39.2* | .0781 | .1119 | 10.508 | .00 | -.0288 | .0219 | 5.072 | .00 | .0300 | .0163 | 2.982 | .00 |

* OBSERVED DATA

OBSERVED DATA

| : DATE 08/04/77 TIME 04:00:00 : DATE 08/04/77 TIME 05:00:00 : DATE 08/04/77 TIME 06:00:00 : | | | | | | | | | | | | | | | | | | | |
|---|--------------|--------------------------|-----------------|--------------------------|--------|--------------------------|-------------|--------------------------|-----------------|-------------|-------|-----------------|-------------|-------|-----------------|-------------|-------|-----------------|--|
| : WEATHER : | | : WEATHER : | | : WEATHER : | | : WEATHER : | | : WEATHER : | | | | | | | | | | | |
| : TEMP DEG C 9.4 : | | : TEMP DEG C 8.9 : | | : TEMP DEG C 10.6 : | | : TEMP DEG C 10.6 : | | : TEMP DEG C 10.6 : | | | | | | | | | | | |
| : DEW POINT DEG C -8.3 : | | : DEW POINT DEG C -8.9 : | | : DEW POINT DEG C -7.8 : | | : DEW POINT DEG C -7.8 : | | : DEW POINT DEG C -7.8 : | | | | | | | | | | | |
| : VISIBILITY (MI) 20 : | | : VISIBILITY (MI) 20 : | | : VISIBILITY (MI) 50 : | | : VISIBILITY (MI) 50 : | | : VISIBILITY (MI) 50 : | | | | | | | | | | | |
| CLD (TENTHS) | :LOW | MID | HI | TOTL | 0:LOW | MID | HI | TOTL | 0 | | | | | | | | | | |
| CLD HT (M) | :LOW | MID | HI | HI | :LOW | MID | HI | HI | TOTL | | | | | | | | | | |
| EXPONENTS | : A = | .01 | B = | .24 | P = | .37 | : A = | -.33 | B = | -.34 | P = | .53 | : A = | -.32 | B = | -.35 | P = | .26 | |
| NET RADIATION | -7.95 MW/CM2 | | | | | | | | | | | | | | | | | | |
| RICHARDSON NO. | : (4M) | .23 | (8M) | .46 | (16M) | .72 | : (4M) | .16 | (8M) | .27 | (16M) | .37 | : (4M) | .02 | (8M) | .05 | (16M) | .11 | |
| | : (39.192M) | .50 | (OBSERVED DATA) | : (39.192M) | .07 | (OBSERVED DATA) | : (39.192M) | .10 | (OBSERVED DATA) | : (39.192M) | .10 | (OBSERVED DATA) | : (39.192M) | .10 | (OBSERVED DATA) | : (39.192M) | .10 | (OBSERVED DATA) | |
| (1/L)*10 | : (4M) | 2.51 | (8M) | 4.61 | (16M) | 5.32 | : (4M) | 1.39 | (8M) | 1.73 | (16M) | 1.53 | : (4M) | .06 | (8M) | .11 | (16M) | .18 | |
| USTAR | : (4M) | 1.057 | (8M) | .0899 | (16M) | .0843 | : (4M) | .0518 | (8M) | .0560 | (16M) | .0653 | : (4M) | .4387 | (8M) | .4259 | (16M) | .4040 | |
| : WS TEMP SIGA SIGE : WS TEMP SIGA SIGE : WS TEMP SIGA SIGE : WS TEMP SIGA SIGE : | | | | | | | | | | | | | | | | | | | |
| HEIGHT (M) | : WD | (M/S) | (C) | (DEG) | (DEG) | (DEG) | WD | (M/S) | (C) | (DEG) | (DEG) | (DEG) | WD | (M/S) | (C) | (DEG) | (DEG) | (DEG) | |
| 1. | : 9.30 | | | | | | | | | | | | | | | | | | |
| 2. | : 79. | 1.82 | 6.69 | 5.1 | : 130. | .79 | 9.75 | 24.4 | : 148. | 5.22 | 11.15 | 7.6 | | | | | | | |
| 4. | : 77. | 2.50 | 7.15 | 4.1 | : 131. | 1.09 | 9.63 | 27.6 | : 143. | 6.23 | 11.06 | 6.1 | | | | | | | |
| 8. | : 78. | 3.41 | 8.84 | 2.8 | : 136. | 1.35 | 10.32 | 21.0 | : 139. | 7.32 | 11.65 | 5.5 | | | | | | | |
| 16. | : 97. | 3.68 | 10.40 | 4.5 | : 143. | 1.79 | 10.52 | 17.9 | : 144. | 8.57 | 11.97 | 4.2 | | | | | | | |
| 32. | : 110. | 5.34 | 11.41 | 4.4 | : 144. | 2.91 | 10.74 | 12.1 | : 143. | 10.47 | 12.49 | 3.4 | | | | | | | |
| 48. | : 123. | 6.07 | 11.73 | 4.7 | : 142. | 4.76 | 11.01 | 8.9 | : 145. | 12.17 | 12.88 | 2.6 | | | | | | | |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WS | TEMP | SIGA | SIGE | WS | TEMP | SIGA | SIGE | WS | TEMP | SIGA | SIGE | WS | TEMP | SIGA | SIGE |
|------------|-------|--------|--------|-------|-------|--------|--------|-------|-------|--------|--------|-------|-------|------|-------|-------|
| : | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) | (M/S) | (C) | (DEG) | (DEG) |
| 1.0 | 1.46 | 6.44 | 4.1 | 1.2 | .50 | 9.54 | 38.1 | 32.7 | 4.31 | 10.99 | 9.9 | 8.9 | | | | |
| 2.0 | 1.89 | 6.74 | 4.2 | 1.5 | .72 | 9.61 | 30.3 | 25.8 | 5.16 | 11.06 | 7.9 | 7.0 | | | | |
| 4.0 | 2.44 | 7.32 | 4.2 | 1.7 | 1.04 | 9.76 | 24.1 | 20.3 | 6.18 | 11.21 | 6.3 | 5.5 | | | | |
| 8.0 | 3.14 | 8.38 | 4.2 | 2.1 | 1.50 | 10.02 | 19.2 | 16.0 | 7.39 | 11.47 | 5.0 | 4.3 | | | | |
| 16.0 | 4.05 | 10.10 | 4.2 | 2.4 | 2.16 | 10.46 | 15.2 | 12.6 | 8.85 | 11.94 | 4.0 | 3.4 | | | | |
| 32.0 | 5.22 | 11.91 | 4.3 | 2.9 | 3.11 | 10.95 | 12.1 | 9.9 | 10.59 | 12.59 | 3.2 | 2.7 | | | | |
| 48.0 | 6.06 | 11.55 | 4.3 | 3.2 | 3.85 | 10.93 | 10.6 | 8.6 | 11.77 | 12.84 | 2.8 | 2.3 | | | | |
| | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | DU/DZ | DTH/DZ | BU*100 | RI | | | | |
| 4.0 | .2087 | .2835 | 2.673 | .00 | .1293 | .0781 | 4.018 | .00 | .3722 | .0789 | .114 | .00 | | | | |
| 8.0 | .1346 | .2413 | 5.451 | .00 | .0931 | .0683 | 6.755 | .00 | .2227 | .0714 | .288 | .00 | | | | |
| 16.0 | .0868 | .1568 | 8.468 | .00 | .0671 | .0485 | 9.236 | .00 | .1333 | .0563 | .633 | .00 | | | | |
| 39.2* | .0456 | .0300 | 4.937 | .00 | .1156 | .0269 | 10.174 | .00 | .1063 | .0344 | 1.434 | .00 | | | | |

* OBSERVED DATA

OBSERVED DATA

| | | | | | | | | | | | | | | |
|-------------------|--------------------|-------------------|--------------------|-------------------|--------------------|-------------------|--------------------|------------------|---------|---------|---------|--------|---------|---------|
| | : DATE 08/04/77 | : TIME 07:00:00 | : DATE 08/04/77 | : TIME 08:00:00 | : DATE 08/04/77 | : TIME 09:00:00 | | | | | | | | |
| : WEATHER | : WEATHER | : WEATHER | : WEATHER | : WEATHER | : WEATHER | : WEATHER | | | | | | | | |
| : TEMP DEG C | : TEMP DEG C | : TEMP DEG C | : TEMP DEG C | : TEMP DEG C | : TEMP DEG C | : TEMP DEG C | | | | | | | | |
| : DEW POINT DEG C | : DEW POINT DEG C | : DEW POINT DEG C | : DEW POINT DEG C | : DEW POINT DEG C | : DEW POINT DEG C | : DEW POINT DEG C | | | | | | | | |
| : VISIBILITY (MI) | : VISIBILITY (MI) | : VISIBILITY (MI) | : VISIBILITY (MI) | : VISIBILITY (MI) | : VISIBILITY (MI) | : VISIBILITY (MI) | | | | | | | | |
| :LOW MID HI | :LOW MID HI | :LOW MID HI | :LOW MID HI | :LOW MID HI | :LOW MID HI | :LOW MID HI | | | | | | | | |
| :LOW MID HI | :LOW MID HI | :LOW MID HI | :LOW MID HI | :LOW MID HI | :LOW MID HI | :LOW MID HI | | | | | | | | |
| : A = -0.26 | : A = -0.31 | : P = .20 | : A = -0.24 | : B = -0.02 | : P = .13 | : A = -0.22 | : B = -0.13 | : P = .14 | | | | | | |
| : -3.63 | : MW/CM2 | | : 10.89 | : MW/CM2 | | : 25.40 | : MW/CM2 | | | | | | | |
| : (4M) .01 | : (8M) .03 | : (16M) .07 | : (4M) -.01 | : (8M) -.04 | : (16M) -.09 | : (4M) -.02 | : (8M) -.07 | : (16M) -.15 | | | | | | |
| : (39.192M) .08 | : (OBSERVED DATA): | : (39.192M) -.03 | : (OBSERVED DATA): | : (39.192M) -.51 | : (OBSERVED DATA): | : (39.192M) -.51 | : (OBSERVED DATA): | : (39.192M) -.11 | | | | | | |
| : (4M) .03 | : (8M) .05 | : (16M) .09 | : (4M) -.05 | : (8M) -.06 | : (16M) -.06 | : (4M) -.08 | : (8M) -.10 | : (16M) -.11 | | | | | | |
| : (4M) .4671 | : (8M) .4456 | : (16M) .4190 | : (4M) .5249 | : (8M) .5088 | : (16M) .5024 | : (4M) .6303 | : (8M) .6166 | : (16M) .6140 | | | | | | |
| : WD | : WS | : TEMP | : SIGA | : SIGE | : WD | : WS | : TEMP | : SIGA | : SIGE | : WD | : WS | : TEMP | : SIGA | : SIGE |
| : (DEG) | : (M/S) | : (C) | : (DEG) | : (DEG) | : (DEG) | : (M/S) | : (C) | : (DEG) | : (DEG) | : (DEG) | : (M/S) | : (C) | : (DEG) | : (DEG) |
| 1. | 148. | 5.53 | 12.56 | 6.9 | 157. | 5.97 | 15.79 | 8.7 | 151. | 7.12 | 18.37 | 7.5 | | |
| 2. | 142. | 6.49 | 12.76 | 6.1 | 152. | 6.99 | 15.34 | 7.7 | 146. | 8.25 | 17.64 | 6.7 | | |
| 4. | 139. | 7.33 | 12.92 | 5.6 | 147. | 7.88 | 15.49 | 6.3 | 142. | 9.39 | 17.74 | 6.1 | 4.4 | |
| 8. | 143. | 8.25 | 12.88 | 4.5 | 151. | 8.31 | 15.27 | 5.2 | 146. | 10.05 | 17.46 | 4.9 | 3.9 | |
| 16. | 141. | 9.53 | 12.97 | 3.6 | 149. | 8.80 | 15.03 | 4.6 | 144. | 10.73 | 17.07 | 4.4 | 3.9 | |
| 32. | 143. | 10.95 | 13.09 | 3.0 | 147. | 9.49 | 14.84 | 4.0 | 144. | 11.14 | 16.75 | 3.7 | 3.4 | |
| 48. | | | | | | | | | | | | | | |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WD (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|----------|----------|----------|------------|------------|
| 1.0 | | 4.80 | 12.64 | 8.8 | 8.7 | | 5.68 | 15.69 | 10.5 | 4.6 | | 6.75 | 18.25 | 9.0 | 5.7 |
| 2.0 | | 5.54 | 12.66 | 7.4 | 7.0 | | 6.23 | 15.65 | 8.8 | 4.5 | | 7.42 | 18.18 | 7.7 | 5.2 |
| 4.0 | | 6.38 | 12.70 | 6.1 | 5.7 | | 6.84 | 15.59 | 7.5 | 4.5 | | 8.15 | 18.06 | 6.7 | 4.8 |
| 8.0 | | 7.35 | 12.77 | 5.1 | 4.6 | | 7.51 | 15.47 | 6.3 | 4.4 | | 8.96 | 17.83 | 5.7 | 4.4 |
| 16.0 | | 8.46 | 12.88 | 4.3 | 3.7 | | 8.24 | 15.27 | 5.3 | 4.4 | | 9.85 | 17.44 | 4.9 | 4.0 |
| 32.0 | | 9.75 | 13.03 | 3.6 | 3.0 | | 9.05 | 14.98 | 4.5 | 4.3 | | 10.83 | 16.94 | 4.3 | 3.7 |
| 48.0 | | 10.59 | 13.07 | 3.2 | 2.6 | | 9.55 | 14.86 | 4.1 | 4.3 | | 11.45 | 16.80 | 3.9 | 3.5 |
| | DU/DZ | DT/DZ | BU*100 | RI | | DU/DZ | DT/DZ | BU*100 | RI | | DU/DZ | DT/DZ | BU*100 | RI | |
| 4.0 | | .3018 | .0274 | .037 | .00 | | .2127 | -.0199 | -.023 | -.01 | | .2577 | -.0486 | -.039 | -.02 |
| 8.0 | | .1738 | .0252 | .103 | .00 | | .1168 | -.0168 | -.065 | -.04 | | .1417 | -.0415 | -.111 | -.07 |
| 16.0 | | .1001 | .0209 | .256 | .00 | | .0641 | -.0104 | -.134 | -.09 | | .0779 | -.0271 | -.241 | -.15 |
| 39.2* | | .0887 | .0175 | .890 | .00 | | .0431 | -.0019 | -.118 | -.03 | | .0256 | -.0100 | -.436 | -.51 |

* OBSERVED DATA

OBSERVED DATA

| DATE 08/04/77 | TIME 10:00:00 | DATE 08/04/77 | TIME 11:00:00 | DATE 08/04/77 | TIME 12:00:00 |
|---|-------------------------------------|-------------------------------------|---------------|---------------|---------------|
| WEATHER | WEATHER | WEATHER | | | |
| TEMP DEG C 22.5 | TEMP DEG C 24.4 | TEMP DEG C 25.8 | | | |
| DEW POINT DEG C -6.0 | DEW POINT DEG C -6.1 | DEW POINT DEG C -5.6 | | | |
| VISIBILITY (MI) 70 | VISIBILITY (MI) 60 | VISIBILITY (MI) 60 | | | |
| CLD (TENTHS) :LOW | CLD (TENTHS) :LOW | CLD (TENTHS) :LOW | | | |
| CLD HT (M) :LOW | CLD HT (M) :LOW | CLD HT (M) :LOW | | | |
| EXPONENTS :A = -.11 B = .06 P = .13 | EXPONENTS :A = -.06 B = .07 P = .11 | EXPONENTS :A = -.11 B = .16 P = .12 | | | |
| NET RADIATION :37.33 MW/CM2 | NET RADIATION :43.54 MW/CM2 | NET RADIATION :48.57 MW/CM2 | | | |
| RICHARDSON NO. : (4M) -.04 (8M) -.12 (16M) -.24 : (4M) -.11 (8M) -.32 (16M) -.66 : (4M) -.07 (8M) -.19 (16M) -.38 : | | | | | |
| (1/L)*10 : (39.192M) -.83 (OBSERVED DATA) : (39.192M) -.76 (OBSERVED DATA) : (39.192M) -.62 (OBSERVED DATA) : | | | | | |
| USTAR : (4M) -.13 (8M) -.17 (16M) -.17 : (4M) -.33 (8M) -.44 (16M) -.45 : (4M) -.20 (8M) -.26 (16M) -.26 : | | | | | |
| USTAR : (4M) .6592 (8M) .6452 (16M) .6399 : (4M) .5454 (8M) .5381 (16M) .5332 : (4M) .6535 (8M) .6418 (16M) .6370 : | | | | | |
| HEIGHT (M) : (DEG) (M/S) (C) (DEG) (DEG) (DEG) (M/S) (C) (DEG) (DEG) (DEG) : | | | | | |
| 1. : 22.01 | 24.18 | 25.02 | | | |
| 2. : 156. 7.31 21.80 9.0 | 177. 6.00 23.86 16.8 | 174. 7.25 24.67 12.7 | | | |
| 4. : 152. 8.61 20.77 8.2 | 172. 6.81 22.76 16.9 | 169. 8.38 23.36 12.0 | | | |
| 8. : 147. 9.73 20.84 7.3 | 168. 7.49 22.78 16.8 | 164. 9.34 23.47 11.8 | | | |
| 16. : 151. 10.26 20.53 6.7 | 172. 7.90 22.38 15.4 | 168. 9.86 23.05 10.4 | | | |
| 32. : 149. 10.82 20.10 6.2 | 170. 8.25 21.96 14.9 | 165. 10.38 22.55 9.4 | | | |
| 48. : 150. 11.12 19.80 6.7 | 170. 8.54 21.68 13.9 | 165. 10.75 22.23 9.0 | | | |

LEAST SQUARES FITTED DATA

| HEIGHT (M) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) | WS (M/S) | TEMP (C) | SIGA (DEG) | SIGE (DEG) |
|------------|----------|----------|------------|------------|----------|----------|------------|------------|----------|----------|------------|------------|
| 1.0 | 7.08 | 21.63 | 9.5 | 3.9 | 5.79 | 23.72 | 18.2 | 3.9 | 6.99 | 24.49 | 14.1 | 3.1 |
| 2.0 | 7.72 | 21.54 | 8.8 | 4.0 | 6.23 | 23.61 | 17.4 | 4.1 | 7.58 | 24.37 | 13.1 | 3.4 |
| 4.0 | 8.43 | 21.36 | 8.1 | 4.2 | 6.70 | 23.40 | 16.7 | 4.3 | 8.23 | 24.14 | 12.1 | 3.8 |
| 8.0 | 9.19 | 21.04 | 7.5 | 4.4 | 7.21 | 23.01 | 16.0 | 4.5 | 8.93 | 23.71 | 11.2 | 4.3 |
| 16.0 | 10.03 | 20.50 | 7.0 | 4.6 | 7.76 | 22.37 | 15.4 | 4.7 | 9.68 | 23.02 | 10.3 | 4.8 |
| 32.0 | 10.94 | 19.89 | 6.5 | 4.8 | 8.35 | 21.69 | 14.8 | 4.9 | 10.51 | 22.26 | 9.5 | 5.4 |
| 48.0 | 11.51 | 19.89 | 6.2 | 4.9 | 8.72 | 21.79 | 14.4 | 5.1 | 11.02 | 22.35 | 9.1 | 5.7 |
| | DU/DZ | DTM/DZ | BU*100 | RI | DU/DZ | DTM/DZ | BU*100 | RI | DU/DZ | DTM/DZ | BU*100 | RI |
| 4.0 | .2447 | -.0742 | -.056 | -.02 | .1638 | -.0908 | -.107 | -.01 | .2240 | -.0998 | -.078 | -.03 |
| 8.0 | .1335 | -.0621 | -.157 | -.06 | .0881 | -.0755 | -.307 | -.16 | .1215 | -.0834 | -.221 | -.09 |
| 16.0 | .0728 | -.0380 | -.322 | -.24 | .0474 | -.0449 | -.633 | -.66 | .0659 | -.0504 | -.455 | -.38 |
| 39.2* | .0188 | -.0087 | -.374 | -.42 | .0181 | -.0075 | -.545 | -.76 | .0231 | -.0100 | -.458 | -.62 |

* OBSERVED DATA

OBSERVED DATA

```

: DATE 08/04/77 TIME 13:00:00 : DATE 08/04/77 TIME 14:00:00 : DATE 08/04/77 TIME 15:00:00 :
: WEATHER : WEATHER : WEATHER :
: TEMP DEG C 27.0 : TEMP DEG C 27.9 : TEMP DEG C 28.6 :
: DEW POINT DEG C -5.0 : DEW POINT DEG C -4.6 : DEW POINT DEG C -3.9 :
: VISIBILITY (MI) 50 : VISIBILITY (MI) 50 : VISIBILITY (MI) 30 :
: LOW MID HI 2 TOTL 2:LOW HI 2 TOTL 2:LOW MID HI 4 TOTL 4:
: CLD (TENTHS) : CLD HT (M) : CLD HT (M) :
: EXPONENTS : A = -.09 B = .22 P = .11 : A = .00 B = .05 P = .11 : A = -.09 B = .13 P = .12 :
: NET RADIATION : 45.36 MW/CM2 : 41.66 MW/CM2 : 41.31 MW/CM2 :
: RICHARDSON NO.: (4M) -.07 (8M) -.19(16M) -.38 : (4M) -.07 (8M) -.19(16M) -.37 : (4M) -.03 (8M) -.09(16M) -.18 :
: (1/L)*10 : (39.192M) -.14 (OBSERVED DATA): (39.192M) .13 (OBSERVED DATA): (39.192M) -.26 (OBSERVED DATA):
: USTAR : (4M) -.20 (8M) -.27 (16M) -.26 : (4M) -.20 (8M) -.27 (16M) -.25 : (4M) -.09 (8M) -.13 (16M) -.13 :
: (4M).6655 (8M).6501 (16M).6404 : (4M).6266 (8M).6141 (16M).6062 : (4M).6464 (8M).6290 (16M).6213 :

```

```

: WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE :
: HEIGHT (M) : (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) : (DEG) (M/S) (C) (DEG) (DEG) :
: 1. : 25.78 : 26.38 : 26.69 :
: 2. : 178. : 7.43 25.61 14.4 : 191. : 7.03 26.09 11.1 : 172. : 7.39 26.54 9.2 :
: 4. : 174. : 8.52 24.23 13.5 : 186. : 8.01 24.75 11.2 : 167. : 8.44 25.36 7.8 :
: 8. : 170. : 9.45 24.42 13.1 : 181. : 8.81 24.99 11.0 : 163. : 9.40 25.77 7.3 :
: 16. : 173. : 9.88 24.06 12.0 : 184. : 9.37 24.66 11.0 : 167. : 10.03 25.50 6.7 :
: 32. : 171. : 10.38 23.57 11.1 : 182. : 9.96 24.14 11.3 : 165. : 10.63 25.13 7.0 :
: 48. : 172. : 10.72 23.38 10.8 : 181. : 10.24 24.00 11.2 : 166. : 11.16 24.83 6.8 :

```

LEAST SQUARES FITTED DATA

```

: WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE : WD WS TEMP SIGA SIGE :
: HEIGHT (M) : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) : (M/S) (C) (DEG) (DEG) :
: 1.0 : 7.19 25.35 15.4 2.6 : 6.72 25.89 11.1 4.3 : 7.01 26.31 9.1 3.5 :
: 2.0 : 7.76 25.24 14.5 3.0 : 7.28 25.78 11.1 4.4 : 7.64 26.24 8.6 3.8 :
: 4.0 : 8.37 25.02 13.6 3.4 : 7.88 25.57 11.1 4.6 : 8.33 26.10 8.1 4.2 :
: 8.0 : 9.03 24.63 12.7 4.0 : 8.53 25.18 11.1 4.7 : 9.08 25.86 7.6 4.6 :
: 16.0 : 9.74 24.00 12.0 4.7 : 9.24 24.57 11.2 4.9 : 9.89 25.45 7.2 5.0 :
: 32.0 : 10.50 23.34 11.2 5.4 : 10.00 23.93 11.2 5.0 : 10.78 24.96 6.7 5.4 :
: 48.0 : 10.97 23.48 10.8 5.9 : 10.48 24.09 11.2 5.1 : 11.33 24.90 6.5 5.7 :
: DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI : DU/DZ DTH/DZ BU*100 RI :
: 4.0 : .2111 -.0911 -.068 -.03 : .2089 -.0890 -.075 -.03 : .2390 -.0531 -.040 -.03 :
: 8.0 : .1139 -.0754 -.195 -.10 : .1131 -.0734 -.212 -.09 : .1302 -.0446 -.114 -.09 :
: 16.0 : .0614 -.0439 -.391 -.38 : .0612 -.0422 -.417 -.37 : .0709 -.0275 -.236 -.18 :
: 39.2* : .0212 -.0019 -.086 -.14 : .0175 .0013 .062 .00 : .0331 -.0087 -.374 -.52 :

```

* OBSERVED DATA

PRECEDING PAGE BLANK - FILMED

APPENDIX B

RAWINSONDE AND PILOT BALLOON DATA

DUGWAY PROVING GROUND

Note

Rawinsonde data were obtained during the morning hours and the pilot balloon data were obtained during the afternoon hours.

RADIOSONDE DATE 14/02/77 TIME 05:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | TH# (DEG K) | DTH/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|----------------|-------------------|
| 0. | 876.1 | 355. | 4.6 | .000 | -1.5 | -5.3 | 2.9 | 282.6 | .000 |
| 81. | 867.3 | | | | 2.9 | -3.3 | 3.5 | 288.1 | 67.886 |
| 175. | 857.3 | | | | 3.9 | -3.5 | 3.4 | 290.1 | 42.864 |
| 275. | 846.8 | | | | 4.2 | -3.2 | 3.6 | 291.5 | 32.228 |
| 305. | 843.7 | 353. | 10.7 | .200 | 4.0 | -3.5 | 3.5 | 291.6 | 29.332 |
| 609. | 812.5 | 354. | 12.0 | .122 | 2.2 | -5.9 | 3.0 | 292.7 | 16.597 |
| 914. | 782.5 | 352. | 11.7 | .078 | .4 | -8.3 | 2.6 | 293.9 | 12.325 |
| 921. | 781.8 | | | | .4 | -8.4 | 2.6 | 294.0 | 12.310 |
| 1055. | 768.8 | | | | .6 | -10.0 | 2.3 | 295.6 | 12.244 |
| 1219. | 753.3 | 353. | 10.5 | .048 | -.7 | -11.3 | 2.1 | 295.8 | 10.828 |
| 1413. | 735.2 | | | | -2.3 | -12.8 | 1.9 | 296.1 | 9.539 |
| 1523. | 725.0 | 357. | 10.3 | .037 | -2.8 | -13.6 | 1.8 | 296.7 | 9.257 |
| 1828. | 697.6 | 354. | 11.5 | .038 | -4.9 | -15.0 | 1.7 | 297.7 | 8.223 |
| 1905. | 690.8 | | | | -5.5 | -15.3 | 1.7 | 297.8 | 7.976 |
| 2132. | 671.1 | 350. | 12.5 | .037 | -4.8 | -16.5 | 1.6 | 301.1 | 8.646 |
| 2153. | 669.3 | | | | -4.8 | -16.6 | 1.6 | 301.3 | 8.668 |
| 2741. | 620.8 | 351. | 14.2 | .035 | -8.0 | -22.4 | 1.0 | 304.1 | 7.823 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 14/02/77 | 15:00:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 354.0 | 7.2 |
| 146. | 357.0 | 7.5 |
| 204. | 355.0 | 7.1 |
| 259. | 358.0 | 6.9 |
| 314. | 348.0 | 7.8 |
| 369. | 347.0 | 8.4 |
| 424. | 354.0 | 8.3 |
| 479. | 360.0 | 7.9 |
| 533. | 2.0 | 4.9 |
| 588. | 1.0 | 3.2 |
| 643. | 356.0 | 3.6 |
| 698. | 356.0 | 4.0 |
| 753. | 360.0 | 3.7 |
| 808. | 1.0 | 6.4 |
| 863. | 359.0 | 10.1 |
| 918. | 359.0 | 7.1 |
| 972. | 359.0 | 8.9 |
| 1027. | 356.0 | 10.3 |
| 1082. | 353.0 | 7.1 |
| 1137. | 352.0 | 7.5 |
| 1192. | 352.0 | 7.7 |
| 1247. | 350.0 | 8.8 |
| 1302. | 351.0 | 8.5 |
| 1356. | 352.0 | 7.6 |
| 1411. | 356.0 | 6.9 |
| 1466. | 2.0 | 6.9 |
| 1521. | 2.0 | 6.7 |
| 1576. | 360.0 | 7.1 |
| 1631. | 1.0 | 8.0 |
| 1686. | 3.0 | 8.9 |
| 1741. | 4.0 | 9.4 |
| 1796. | 4.0 | 10.7 |
| 1851. | 3.0 | 11.2 |
| 1905. | 1.0 | 9.8 |
| 1960. | 1.0 | 9.4 |
| 2015. | 1.0 | 9.8 |

RADIOSONDE DATE 15/02/77 TIME 05:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | TH* (DEG K) | DT4/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|----------------|-------------------|
| 0. | 878.3 | | .0 | .000 | -7.0 | -11.2 | 1.3 | 276.5 | .000 |
| 75. | 870.0 | | | | -1.1 | -5.9 | 2.8 | 283.6 | 94.238 |
| 145. | 862.4 | | | | 2.9 | -4.4 | 3.2 | 288.6 | 82.936 |
| 263. | 850.0 | 299. | 1.7 | .065 | 3.5 | -5.9 | 2.9 | 290.3 | 52.469 |
| 304. | 845.6 | 345. | 1.2 | .039 | 3.8 | -6.4 | 2.8 | 291.1 | 47.794 |
| 333. | 842.7 | | | | 3.9 | -6.8 | 2.7 | 291.4 | 44.766 |
| 609. | 814.4 | 348. | 3.3 | .054 | 2.6 | -9.0 | 2.4 | 292.9 | 26.806 |
| 914. | 784.3 | 348. | 5.9 | .065 | 1.2 | -11.3 | 2.0 | 294.5 | 19.623 |
| 939. | 781.8 | | | | 1.1 | -11.5 | 2.0 | 294.6 | 19.268 |
| 1079. | 768.3 | | | | 1.4 | -11.3 | 2.1 | 296.4 | 18.443 |
| 1218. | 755.1 | 346. | 8.6 | .071 | .3 | -11.4 | 2.1 | 296.7 | 16.571 |
| 1286. | 748.8 | | | | -1 | -11.5 | 2.1 | 297.0 | 15.910 |
| 1523. | 726.9 | 347. | 9.3 | .061 | -7 | -12.5 | 2.0 | 298.8 | 14.652 |
| 1828. | 699.7 | 347. | 8.5 | .046 | -1.4 | -13.8 | 1.9 | 301.3 | 13.562 |
| 2132. | 673.3 | 345. | 8.5 | .040 | -2.8 | -14.3 | 1.9 | 303.1 | 12.455 |
| 2305. | 658.8 | | | | -3.7 | -14.6 | 1.9 | 304.0 | 11.901 |
| 2436. | 647.8 | 346. | 10.2 | .042 | -4.6 | -15.5 | 1.8 | 304.4 | 11.436 |
| 2741. | 622.9 | 344. | 12.6 | .046 | -6.9 | -17.6 | 1.5 | 305.1 | 10.438 |
| 3045. | 599.0 | 341. | 14.0 | .046 | -9.2 | -19.7 | 1.3 | 305.9 | 9.636 |
| 3350. | 576.0 | 339. | 14.8 | .044 | -11.4 | -21.8 | 1.2 | 306.7 | 9.008 |
| 3523. | 563.2 | | | | -11.6 | -24.7 | .9 | 308.4 | 9.047 |
| 3655. | 553.6 | 337. | 15.0 | .041 | -12.5 | -26.0 | .8 | 308.8 | 8.840 |
| 3959. | 531.8 | 338. | 15.2 | .033 | -14.5 | -28.9 | .7 | 310.0 | 8.449 |
| 4263. | 510.8 | 340. | 15.8 | .037 | -16.5 | -31.9 | .5 | 311.1 | 8.114 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 15/02/77 | 15:00:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 37.0 | 3.2 |
| 146. | 34.0 | 3.4 |
| 204. | 23.0 | 2.1 |
| 259. | 358.0 | 1.1 |
| 314. | 237.0 | .2 |
| 369. | 170.0 | .9 |
| 424. | 72.0 | .8 |
| 479. | 354.0 | .5 |
| 533. | 259.0 | .9 |
| 588. | 73.0 | 1.4 |
| 643. | 4.0 | 1.3 |
| 698. | 299.0 | 1.5 |
| 753. | 263.0 | .6 |
| 808. | 278.0 | .7 |
| 863. | 290.0 | 3.2 |
| 918. | 287.0 | 3.1 |
| 972. | 279.0 | 2.7 |
| 1027. | 337.0 | 4.5 |
| 1082. | 308.0 | 6.1 |
| 1137. | 316.0 | 6.3 |
| 1192. | 323.0 | 6.7 |
| 1247. | 318.0 | 7.1 |
| 1302. | 313.0 | 7.1 |
| 1356. | 314.0 | 7.3 |
| 1411. | 319.0 | 8.0 |
| 1466. | 320.0 | 9.9 |
| 1521. | 322.0 | 9.6 |
| 1576. | 324.0 | 8.0 |
| 1631. | 323.0 | 9.8 |
| 1686. | 317.0 | 10.7 |
| 1741. | 312.0 | 11.6 |
| 1796. | 312.0 | 11.6 |
| 1851. | 316.0 | 12.5 |
| 1905. | 321.0 | 13.6 |
| 1960. | 324.0 | 12.9 |
| 2015. | 324.0 | 12.5 |

RADIO SCNDE DATE 16/02/77 TIME 05:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 877.2 | 140. | 2.6 | .000 | -4.0 | -10.6 | 1.9 | 279.8 | .000 |
| 46. | 872.1 | | | | 3.6 | -5.1 | 3.0 | 288.3 | 186.204 |
| 144. | 861.7 | | | | 6.8 | -7.7 | 2.5 | 292.6 | 43.311 |
| 256. | 850.0 | 185. | 2.8 | .008 | 7.1 | -8.1 | 2.4 | 294.0 | 12.975 |
| 304. | 845.1 | 164. | 2.8 | .000 | 7.2 | -8.3 | 2.4 | 294.6 | 12.237 |
| 327. | 842.8 | | | | 7.2 | -8.4 | 2.4 | 294.8 | 9.892 |
| 609. | 814.2 | 205. | 2.8 | .000 | 6.5 | -9.6 | 2.3 | 297.0 | 7.648 |
| 914. | 784.5 | 243. | 3.3 | .016 | 5.6 | -11.0 | 2.1 | 299.2 | 7.140 |
| 1090. | 767.8 | | | | 5.2 | -11.8 | 2.0 | 300.6 | 7.947 |
| 1218. | 755.7 | 277. | 5.3 | .066 | 4.4 | -12.8 | 1.9 | 301.1 | 3.731 |
| 1523. | 727.7 | 298. | 7.7 | .079 | 2.5 | -15.1 | 1.6 | 302.2 | 3.726 |
| 1828. | 700.7 | 304. | 7.3 | -.013 | .6 | -17.4 | 1.4 | 303.3 | 3.727 |
| 2132. | 674.7 | 301. | 6.6 | -.023 | -1.3 | -19.7 | 1.2 | 304.5 | 3.724 |
| 2185. | 670.3 | | | | -1.6 | -20.1 | 1.1 | 304.7 | 4.293 |
| 2437. | 649.4 | 304. | 7.6 | .033 | -2.3 | -25.1 | .8 | 306.6 | 7.570 |
| 2654. | 631.8 | | | | -2.9 | -29.5 | .5 | 308.3 | 7.783 |
| 2741. | 624.8 | 313. | 8.6 | .033 | -3.6 | -29.1 | .5 | 308.5 | 2.158 |
| 3045. | 601.0 | 318. | 9.2 | .020 | -6.0 | -27.8 | .6 | 309.2 | 2.257 |
| 3350. | 578.0 | 319. | 9.2 | .000 | -8.4 | -26.5 | .8 | 309.8 | 2.236 |
| 3558. | 562.8 | | | | -10.0 | -25.6 | .8 | 310.3 | 2.405 |
| 3654. | 555.7 | 325. | 10.0 | .026 | -10.7 | -25.7 | .8 | 310.6 | 3.135 |
| 3959. | 534.0 | 329. | 13.2 | .105 | -12.7 | -26.2 | .8 | 311.8 | 3.816 |
| 4263. | 513.0 | 324. | 15.7 | .082 | -14.7 | -26.7 | .8 | 313.0 | 3.867 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 16/02/77 | 15:00:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 351.0 | 3.0 |
| 146. | 297.0 | 1.2 |
| 204. | 209.0 | 1.6 |
| 259. | 186.0 | 2.4 |
| 314. | 201.0 | 2.6 |
| 369. | 196.0 | 3.4 |
| 424. | 187.0 | 4.5 |
| 479. | 187.0 | 4.5 |
| 533. | 183.0 | 4.5 |
| 588. | 185.0 | 4.5 |
| 643. | 190.0 | 3.0 |
| 698. | 219.0 | 1.6 |
| 753. | 236.0 | 1.6 |
| 808. | 257.0 | 1.9 |
| 863. | 276.0 | 2.1 |
| 918. | 294.0 | 2.5 |
| 972. | 304.0 | 3.7 |
| 1027. | 295.0 | 5.4 |
| 1082. | 298.0 | 7.2 |
| 1137. | 302.0 | 8.2 |
| 1192. | 296.0 | 9.4 |
| 1247. | 297.0 | 9.8 |
| 1302. | 297.0 | 9.8 |
| 1356. | 294.0 | 10.3 |
| 1411. | 294.0 | 9.4 |
| 1466. | 292.0 | 8.9 |
| 1521. | 291.0 | 9.6 |
| 1576. | 289.0 | 9.8 |
| 1631. | 287.0 | 10.7 |
| 1686. | 287.0 | 10.5 |
| 1741. | 287.0 | 10.8 |
| 1796. | 288.0 | 11.2 |
| 1851. | 290.0 | 10.0 |
| 1905. | 293.0 | 10.3 |
| 1960. | 297.0 | 11.2 |
| 2015. | 301.0 | 11.2 |

RADIOSONDE DATE 17/02/77 TIME 05:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV# (DEG K) | DTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 874.7 | CALM | 0 | | -3.0 | -8.2 | 2.3 | 281.1 | .000 |
| 34. | 871.0 | | | | 1.2 | -5.1 | 3.0 | 285.9 | 171.18 |
| 148. | 858.8 | | | | 6.5 | -7.6 | 2.5 | 292.6 | 58.021 |
| 233. | 850.0 | | 1.0 | .004 | 3.2 | -7.2 | 2.6 | 295.2 | 31.362 |
| 254. | 847.8 | | | | 8.6 | -7.1 | 2.6 | 295.9 | 30.658 |
| 304. | 842.7 | | 1.0 | .000 | 8.6 | -7.4 | 2.6 | 296.4 | 10.057 |
| 487. | 824.3 | | | | 8.7 | -8.5 | 2.4 | 298.3 | 10.676 |
| 593. | 813.8 | | | | 9.8 | -10.0 | 2.2 | 300.5 | 20.939 |
| 609. | 812.2 | | 2.8 | .059 | 9.7 | -10.2 | 2.2 | 300.6 | 3.586 |
| 914. | 782.5 | | 4.7 | .062 | 7.3 | -12.3 | 1.9 | 301.2 | 1.944 |
| 1218. | 753.9 | | 7.5 | .092 | 5.0 | -14.4 | 1.7 | 301.9 | 2.250 |
| 1523. | 726.4 | | 9.1 | .052 | 2.6 | -16.5 | 1.4 | 302.4 | 1.815 |
| 1580. | 721.3 | | | | 2.2 | -16.9 | 1.4 | 302.6 | 2.868 |
| 1827. | 699.5 | | 10.1 | .033 | .5 | -20.7 | 1.0 | 303.3 | 2.901 |
| 1916. | 691.8 | | | | .0 | -22.1 | .9 | 303.7 | 4.329 |
| 2132. | 673.2 | | 12.1 | .066 | -1.7 | -23.4 | .9 | 304.1 | 2.116 |
| 2437. | 647.8 | | 14.5 | .079 | -4.1 | -25.2 | .8 | 304.8 | 2.055 |
| 2604. | 634.3 | | | | -5.4 | -26.2 | .7 | 305.1 | 2.097 |
| 2741. | 623.1 | | 17.1 | .086 | -6.3 | -27.3 | .6 | 305.6 | 3.775 |
| 3046. | 599.1 | | 20.3 | .105 | -8.4 | -29.5 | .5 | 306.6 | 3.285 |
| 3250. | 575.9 | | 21.2 | .030 | -10.4 | -31.8 | .5 | 307.8 | 3.696 |
| 3634. | 553.7 | | 19.4 | -.059 | -12.5 | -34.1 | .4 | 308.7 | 3.216 |
| 3779. | 544.3 | | | | -13.3 | -35.0 | .4 | 309.2 | 3.817 |
| 3959. | 532.0 | | 18.6 | -.026 | -14.6 | -36.0 | .3 | 309.8 | 3.041 |
| 4263. | 510.9 | | 21.0 | .079 | -16.8 | -37.7 | .3 | 310.7 | 3.066 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 17/02/77 | 15:00:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 332.0 | 4.0 |
| 146. | 335.0 | 4.0 |
| 204. | 353.0 | 2.9 |
| 259. | 14.0 | 3.3 |
| 314. | 17.0 | 4.0 |
| 369. | 21.0 | 4.2 |
| 424. | 27.0 | 4.5 |
| 479. | 27.0 | 4.5 |
| 533. | 23.0 | 4.0 |
| 588. | 12.0 | 3.8 |
| 643. | 359.0 | 4.3 |
| 698. | 349.0 | 4.9 |
| 753. | 346.0 | 5.1 |
| 808. | 339.0 | 4.5 |
| 863. | 329.0 | 4.4 |
| 918. | 319.0 | 4.5 |
| 972. | 309.0 | 5.0 |
| 1027. | 300.0 | 5.3 |
| 1082. | 294.0 | 5.2 |
| 1137. | 295.0 | 5.5 |
| 1192. | 299.0 | 6.3 |
| 1247. | 300.0 | 6.8 |
| 1302. | 302.0 | 7.3 |
| 1356. | 300.0 | 7.4 |
| 1411. | 297.0 | 6.3 |
| 1466. | 297.0 | 5.4 |
| 1521. | 305.0 | 5.2 |
| 1576. | 309.0 | 4.9 |
| 1631. | 310.0 | 4.5 |
| 1686. | 307.0 | 4.4 |
| 1741. | 298.0 | 4.4 |
| 1796. | 290.0 | 4.5 |
| 1851. | 289.0 | 5.6 |
| 1905. | 290.0 | 6.3 |
| 1960. | 295.0 | 6.3 |
| 2015. | 297.0 | 6.8 |

RADIOSONDE DATE 18/02/77 TIME 05:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | OTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 877.3 | 10. | 2.6 | .000 | -6.2 | -10.8 | 1.9 | 277.5 | .000 |
| 36. | 873.4 | | | | 5.1 | -3.1 | 3.5 | 289.9 | 344.4 |
| 143. | 862.0 | | | | 6.8 | -7.2 | 2.6 | 292.6 | 25.308 |
| 250. | 850.9 | | | | 8.0 | -9.6 | 2.2 | 294.8 | 21.221 |
| 259. | 850.0 | 354. | 3.6 | .039 | 8.0 | -9.6 | 2.2 | 294.9 | 9.963 |
| 305. | 845.3 | 17. | 3.8 | .043 | 7.9 | -9.9 | 2.1 | 295.3 | 7.738 |
| 517. | 823.8 | | | | 7.6 | -10.9 | 2.0 | 297.1 | 8.708 |
| 609. | 814.4 | 8. | 4.8 | .033 | 6.8 | -11.1 | 2.0 | 297.3 | 1.367 |
| 914. | 784.4 | 352. | 6.0 | .039 | 4.4 | -11.8 | 2.0 | 297.9 | 2.051 |
| 1219. | 755.5 | 342. | 7.6 | .052 | 2.0 | -12.4 | 1.9 | 298.5 | 1.993 |
| 1511. | 728.8 | | | | -3 | -13.1 | 1.9 | 299.0 | 1.915 |
| 1523. | 727.7 | 337. | 8.3 | .023 | -4 | -13.4 | 1.9 | 299.1 | .971 |
| 1828. | 700.3 | 330. | 8.0 | -.010 | -2.4 | -22.7 | .9 | 300.0 | 2.960 |
| 1832. | 700.0 | 330. | 8.0 | .000 | -2.4 | -22.9 | .9 | 300.0 | 8.501 |
| 1949. | 689.8 | | | | -3.1 | -26.4 | .6 | 300.4 | 3.778 |
| 2132. | 673.8 | 321. | 8.0 | .000 | -4.6 | -25.3 | .7 | 300.8 | 1.960 |
| 2437. | 648.1 | 310. | 9.7 | .056 | -6.9 | -23.5 | .9 | 301.6 | 2.586 |
| 2637. | 631.8 | | | | -8.4 | -22.3 | 1.0 | 302.1 | 2.583 |
| 2742. | 623.3 | 316. | 12.1 | .079 | -8.0 | -27.0 | .7 | 303.7 | 14.932 |
| 2893. | 611.3 | | | | -7.4 | -33.7 | .4 | 306.0 | 15.408 |
| 3046. | 599.1 | 324. | 14.8 | .089 | -8.6 | -34.9 | .3 | 306.4 | 2.440 |
| 3350. | 575.5 | 329. | 17.1 | .076 | -11.1 | -37.3 | .3 | 307.0 | 1.981 |
| 3655. | 552.9 | 328. | 18.7 | .052 | -13.6 | -39.6 | .2 | 307.5 | 1.857 |
| 3959. | 531.1 | 322. | 19.0 | .010 | -16.1 | -42.0 | .2 | 308.1 | 1.824 |
| 4263. | 510.2 | 316. | 19.1 | .003 | -18.6 | -44.4 | .1 | 308.6 | 1.712 |
| 4417. | 500.0 | 314. | 19.2 | .006 | -19.8 | -45.6 | .1 | 308.9 | 2.088 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 18/02/77 | 15:00:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 7.0 | 2.5 |
| 146. | 2.0 | 2.7 |
| 204. | 353.0 | 3.4 |
| 259. | 346.0 | 3.7 |
| 314. | 357.0 | 3.4 |
| 369. | 14.0 | 3.4 |
| 424. | 6.0 | 3.1 |
| 479. | 359.0 | 2.4 |
| 533. | 359.0 | 2.0 |
| 588. | 352.0 | 2.2 |
| 643. | 350.0 | 2.1 |
| 698. | 351.0 | 2.2 |
| 753. | 351.0 | 2.2 |
| 808. | 348.0 | 2.2 |
| 863. | 345.0 | 2.5 |
| 918. | 341.0 | 2.6 |
| 972. | 331.0 | 2.9 |
| 1027. | 329.0 | 3.0 |
| 1082. | 328.0 | 3.0 |
| 1137. | 328.0 | 3.6 |
| 1192. | 328.0 | 4.0 |
| 1247. | 328.0 | 4.7 |
| 1302. | 326.0 | 5.8 |
| 1356. | 323.0 | 6.7 |
| 1411. | 321.0 | 7.2 |
| 1466. | 320.0 | 7.3 |
| 1521. | 318.0 | 7.6 |
| 1576. | 319.0 | 7.6 |
| 1631. | 322.0 | 7.0 |
| 1686. | 325.0 | 6.7 |
| 1741. | 333.0 | 8.0 |
| 1796. | 336.0 | 8.9 |
| 1851. | 333.0 | 9.7 |
| 1905. | 330.0 | 9.7 |
| 1960. | 332.0 | 10.7 |
| 2015. | 332.0 | 10.9 |

RADIO SCNDE DATE 24/02/77 TIME 09:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | UTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 867.6 | 270. | 3.6 | .000 | .2 | -5.8 | 2.9 | 285.2 | .000 |
| 163. | 850.0 | 286. | 12.7 | .558 | -1.0 | -8.8 | 2.3 | 285.5 | 1.976 |
| 305. | 835.0 | 289. | 10.5 | -.155 | -2.1 | -11.5 | 1.9 | 285.7 | 1.590 |
| 451. | 819.8 | | | | -3.3 | -14.2 | 1.5 | 285.9 | 1.187 |
| 609. | 803.3 | 297. | 9.0 | -.049 | -4.7 | -14.4 | 1.6 | 286.1 | 1.117 |
| 914. | 772.5 | 306. | 8.0 | -.033 | -7.4 | -14.7 | 1.6 | 286.4 | 1.020 |
| 1219. | 742.8 | 313. | 8.7 | .023 | -10.2 | -15.0 | 1.6 | 286.6 | .596 |
| 1459. | 720.2 | | | | -12.4 | -15.3 | 1.6 | 286.7 | .527 |
| 1523. | 714.1 | 322. | 10.5 | .059 | -12.8 | -15.9 | 1.5 | 287.0 | 3.843 |
| 1673. | 700.0 | 328. | 11.6 | .073 | -13.9 | -17.2 | 1.4 | 287.3 | 2.659 |
| 1828. | 685.8 | 332. | 11.9 | .019 | -15.1 | -18.5 | 1.3 | 287.7 | 2.129 |
| 2132. | 658.6 | 339. | 11.3 | -.020 | -17.4 | -21.2 | 1.1 | 288.4 | 2.353 |
| 2437. | 632.5 | 345. | 9.1 | -.072 | -19.6 | -23.8 | .9 | 289.2 | 2.664 |
| 2526. | 625.0 | | | | -20.3 | -24.6 | .8 | 289.4 | 2.001 |
| 2741. | 606.8 | 346. | 7.8 | -.043 | -22.2 | -26.6 | .7 | 289.6 | 1.128 |
| 3046. | 581.8 | 342. | 7.6 | -.007 | -24.8 | -29.5 | .6 | 290.1 | 1.454 |
| 3350. | 557.9 | 335. | 7.6 | .000 | -27.4 | -32.4 | .4 | 290.5 | 1.337 |
| 3655. | 535.0 | 321. | 8.0 | .013 | -30.1 | -35.3 | .3 | 290.7 | .839 |
| 3720. | 530.2 | | | | -30.6 | -35.9 | .3 | 290.9 | 2.271 |
| 3959. | 512.5 | 309. | 8.9 | .030 | -32.7 | -38.2 | .3 | 291.2 | 1.192 |
| 4133. | 500.0 | 306. | 9.2 | .017 | -34.2 | -40.0 | .2 | 291.4 | 1.305 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 24/02/77 | 16:00:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 34.0 | 6.5 |
| 146. | 32.0 | 6.0 |
| 204. | 30.0 | 4.9 |
| 259. | 29.0 | 5.0 |
| 314. | 29.0 | 5.3 |
| 369. | 25.0 | 4.5 |
| 424. | 2.0 | 3.6 |
| 479. | 330.0 | 3.1 |
| 533. | 303.0 | 2.2 |
| 588. | 277.0 | 1.8 |
| 643. | 284.0 | 1.8 |
| 698. | 304.0 | 2.1 |
| 753. | 292.0 | 2.1 |
| 808. | 282.0 | 2.7 |
| 863. | 298.0 | 3.1 |
| 918. | 318.0 | 3.5 |
| 972. | 323.0 | 4.6 |
| 1027. | 319.0 | 5.4 |
| 1082. | 312.0 | 5.3 |
| 1137. | 311.0 | 5.4 |
| 1192. | 312.0 | 5.6 |
| 1247. | 316.0 | 5.1 |
| 1302. | 316.0 | 4.9 |
| 1356. | 314.0 | 5.1 |
| 1411. | 312.0 | 4.6 |
| 1466. | 303.0 | 4.9 |
| 1521. | 291.0 | 4.6 |
| 1579. | 282.0 | 4.5 |
| 1631. | 279.0 | 4.9 |
| 1686. | 281.0 | 5.4 |

RADIO SCNDE DATE 25/02/77 TIME 06:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DJ/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | UTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 869.8 | 340. | 2.7 | .000 | -5.0 | -12.0 | 1.7 | 279.4 | .000 |
| 131. | 855.5 | | | | -4.0 | -9.5 | 2.2 | 281.8 | 18.680 |
| 181. | 850.0 | 337. | 8.0 | .293 | -4.4 | -9.8 | 2.1 | 281.9 | 1.887 |
| 305. | 836.7 | 349. | 7.6 | -.032 | -5.2 | -10.5 | 2.0 | 282.3 | 3.364 |
| 584. | 807.5 | | | | -7.2 | -11.9 | 1.9 | 283.1 | 2.609 |
| 609. | 804.8 | 349. | 9.4 | .059 | -7.4 | -11.9 | 1.9 | 283.1 | 2.372 |
| 863. | 779.0 | | | | -9.4 | -11.2 | 2.1 | 283.6 | 2.089 |
| 914. | 773.8 | 358. | 10.0 | .020 | -9.8 | -11.7 | 2.0 | 283.7 | 1.980 |
| 1219. | 743.7 | 2. | 11.0 | .033 | -12.5 | -14.8 | 1.6 | 284.0 | .750 |
| 1255. | 740.2 | | | | -12.8 | -14.5 | 1.7 | 284.0 | 1.793 |
| 1523. | 714.5 | 6. | 11.4 | .013 | -14.9 | -16.2 | 1.5 | 284.6 | 2.021 |
| 1678. | 700.0 | 11. | 11.4 | .000 | -16.1 | -17.0 | 1.4 | 284.9 | 2.139 |
| 1818. | 687.2 | 16. | 16.6 | .347 | -17.2 | -17.7 | 1.4 | 285.2 | 1.944 |
| 1828. | 686.3 | | | | -17.3 | -18.3 | 1.3 | 285.2 | -1.621 |
| 1938. | 676.2 | | | | -17.7 | -24.6 | .8 | 285.8 | 6.079 |
| 2132. | 658.6 | 21. | 12.3 | -.141 | -19.2 | -26.1 | .7 | 286.3 | 2.366 |
| 2437. | 632.0 | 18. | 13.4 | .030 | -21.6 | -28.5 | .6 | 286.9 | 2.092 |
| 2741. | 606.4 | 13. | 13.9 | .016 | -24.0 | -30.9 | .5 | 287.6 | 2.060 |
| 2987. | 586.5 | | | | -25.9 | -32.8 | .4 | 288.1 | 2.162 |
| 3046. | 581.7 | 12. | 12.6 | -.043 | -26.4 | -33.5 | .4 | 288.2 | 1.521 |
| 3550. | 557.4 | 12. | 16.0 | .067 | -29.0 | -37.1 | .3 | 288.6 | .886 |
| 3655. | 534.2 | 16. | 17.4 | .133 | -31.5 | -40.8 | .2 | 289.2 | 5.001 |
| 3678. | 532.5 | | | | -31.7 | -41.0 | .2 | 289.2 | 1.025 |
| 3959. | 511.6 | 21. | 17.9 | .016 | -33.9 | -43.1 | .2 | 289.8 | 2.347 |
| 4120. | 500.0 | 23. | 17.5 | -.025 | -35.1 | -44.3 | .1 | 290.3 | 2.741 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 25/02/77 | 14:00:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 346.0 | 5.6 |
| 146. | 348.0 | 4.5 |
| 204. | 358.0 | 4.9 |
| 259. | 357.0 | 5.4 |
| 314. | 357.0 | 6.3 |
| 369. | 359.0 | 7.2 |
| 424. | 2.0 | 6.0 |
| 479. | 357.0 | 5.7 |
| 533. | 350.0 | 6.3 |
| 588. | 349.0 | 6.9 |
| 643. | 349.0 | 8.0 |
| 698. | 347.0 | 9.4 |
| 753. | 345.0 | 9.8 |
| 808. | 345.0 | 11.6 |
| 863. | 344.0 | 12.9 |
| 918. | 342.0 | 10.0 |
| 972. | 338.0 | 7.3 |
| 1027. | 338.0 | 5.8 |
| 1082. | 334.0 | 4.7 |
| 1137. | 334.0 | 5.2 |
| 1192. | 328.0 | 4.5 |
| 1247. | 331.0 | 4.1 |
| 1302. | 341.0 | 5.3 |
| 1356. | 341.0 | 5.4 |
| 1411. | 341.0 | 5.4 |
| 1466. | 346.0 | 6.0 |
| 1521. | 349.0 | 5.8 |
| 1576. | 349.0 | 5.8 |
| 1631. | 349.0 | 6.7 |
| 1686. | 349.0 | 7.2 |
| 1741. | 349.0 | 7.2 |
| 1796. | 349.0 | 6.7 |

RADIOSONDE DATE 28/02/77 TIME 08:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV# (DEG K) | DTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 873.6 | 90. | 2.1 | .000 | -2.9 | -7.4 | 2.5 | 281.3 | .000 |
| 39. | 869.3 | | | | -2 | -10.3 | 2.0 | 284.5 | 80.128 |
| 220. | 850.0 | 183. | 8.3 | .282 | .9 | -11.2 | 1.9 | 287.4 | 16.405 |
| 305. | 841.0 | 172. | 8.3 | .000 | 1.4 | -11.7 | 1.9 | 288.8 | 16.383 |
| 331. | 838.3 | | | | 1.5 | -11.8 | 1.8 | 289.2 | 14.210 |
| 609. | 809.7 | 184. | 6.7 | -.053 | .6 | -13.5 | 1.7 | 291.1 | 6.821 |
| 914. | 779.5 | 196. | 4.9 | -.059 | -.5 | -15.4 | 1.5 | 293.1 | 6.446 |
| 968. | 774.3 | | | | -.7 | -15.7 | 1.4 | 293.4 | 6.322 |
| 1219. | 750.1 | 226. | 4.1 | -.026 | -2.6 | -16.7 | 1.4 | 294.0 | 2.385 |
| 1523. | 721.8 | 257. | 5.2 | .036 | -5.0 | -17.9 | 1.3 | 294.6 | 1.973 |
| 1678. | 707.8 | | | | -6.3 | -18.5 | 1.2 | 294.8 | 1.364 |
| 1764. | 700.0 | 269. | 6.4 | .050 | -6.5 | -21.0 | 1.0 | 295.5 | 7.818 |
| 1828. | 694.3 | 271. | 6.5 | .016 | -6.7 | -22.8 | .9 | 295.9 | 6.936 |
| 1885. | 689.3 | | | | -6.8 | -24.4 | .8 | 296.4 | 8.437 |
| 2132. | 667.5 | 278. | 7.3 | .026 | -8.9 | -24.1 | .8 | 296.8 | 1.566 |
| 2437. | 641.6 | 280. | 8.0 | .023 | -11.6 | -23.7 | .9 | 297.1 | 1.059 |
| 2713. | 619.0 | | | | -14.0 | -23.3 | .9 | 297.4 | 1.160 |
| 2741. | 616.7 | 279. | 8.7 | .023 | -13.8 | -31.1 | .5 | 297.9 | 16.395 |
| 2864. | 606.8 | | | | -12.8 | -65.2 | .0 | 300.3 | 19.952 |
| 3046. | 592.5 | 276. | 8.8 | .003 | -13.7 | -64.3 | .0 | 301.4 | 5.552 |
| 3350. | 569.1 | 270. | 9.2 | .013 | -15.3 | -62.8 | .0 | 303.0 | 5.308 |
| 3496. | 558.3 | | | | -16.0 | -62.1 | .0 | 303.8 | 5.740 |
| 3655. | 546.5 | 267. | 10.0 | .026 | -17.2 | -56.2 | .0 | 304.2 | 2.760 |
| 3959. | 524.6 | 271. | 11.2 | .039 | -19.6 | -44.9 | .1 | 305.0 | 2.339 |
| 4263. | 503.5 | 281. | 13.0 | .059 | -21.9 | -33.6 | .4 | 305.8 | 2.830 |
| 4315. | 500.0 | 281. | 12.4 | -.115 | -22.3 | -31.7 | .5 | 306.0 | 2.698 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 28/02/77 | 15:00:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 150.0 | 7.4 |
| 146. | 143.0 | 5.7 |
| 204. | 148.0 | 4.6 |
| 259. | 155.0 | 4.1 |
| 314. | 158.0 | 3.7 |
| 369. | 156.0 | 4.0 |
| 424. | 156.0 | 4.0 |
| 479. | 165.0 | 3.7 |
| 533. | 175.0 | 4.0 |
| 588. | 185.0 | 5.2 |
| 643. | 189.0 | 6.3 |
| 698. | 194.0 | 7.2 |
| 753. | 199.0 | 7.6 |
| 808. | 206.0 | 6.7 |
| 863. | 215.0 | 5.5 |
| 918. | 215.0 | 6.3 |
| 972. | 215.0 | 6.5 |
| 1027. | 230.0 | 5.4 |
| 1082. | 249.0 | 4.5 |
| 1137. | 251.0 | 4.5 |

RADIOSONDE DATE 01/03/77 TIME 05:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DI/DZ (#10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV# (DEG K) | DTHV/DZ (#1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 861.3 | 335. | 10.3 | .000 | -2.5 | -3.9 | 3.3 | 283.0 | .000 |
| 69. | 853.8 | | | | -2.9 | -3.2 | 3.5 | 283.4 | 4.724 |
| 105. | 850.0 | 347. | 11.0 | .067 | -3.1 | -3.3 | 3.5 | 283.5 | 4.164 |
| 305. | 828.8 | 354. | 11.0 | .000 | -3.9 | -4.2 | 3.4 | 284.7 | 5.920 |
| 556. | 802.8 | | | | -4.9 | -5.3 | 3.2 | 286.2 | 6.018 |
| 609. | 797.4 | 341. | 12.1 | .036 | -5.3 | -5.7 | 3.1 | 286.3 | 2.117 |
| 764. | 781.8 | | | | -6.5 | -6.8 | 2.9 | 286.6 | 1.923 |
| 914. | 766.9 | 331. | 12.6 | .016 | -7.4 | -7.8 | 2.8 | 287.2 | 3.866 |
| 1219. | 737.4 | 329. | 10.5 | -.069 | -9.2 | -9.8 | 2.5 | 288.4 | 3.996 |
| 1367. | 723.4 | | | | -10.1 | -10.7 | 2.3 | 289.0 | 3.882 |
| 1523. | 708.9 | 325. | 4.4 | -.201 | -10.5 | -11.1 | 2.3 | 290.2 | 7.895 |
| 1620. | 700.0 | 319. | 2.3 | -.216 | -10.8 | -11.4 | 2.3 | 290.9 | 7.353 |
| 1756. | 687.8 | | | | -11.1 | -11.7 | 2.3 | 292.1 | 8.306 |
| 1828. | 681.3 | 171. | 1.6 | -.034 | -11.6 | -12.2 | 2.2 | 292.3 | 3.100 |
| 2132. | 654.6 | 162. | 4.6 | .099 | -13.6 | -14.2 | 1.9 | 293.3 | 3.470 |
| 2437. | 628.9 | 174. | 6.5 | .062 | -15.6 | -16.2 | 1.7 | 294.4 | 3.449 |
| 2596. | 615.8 | | | | -16.6 | -17.3 | .0 | 294.7 | 2.016 |
| 2741. | 603.8 | 194. | 9.6 | .102 | -17.8 | -18.5 | 1.5 | 295.3 | 3.729 |
| 3046. | 579.4 | 207. | 13.4 | .125 | -20.2 | -21.2 | 1.2 | 295.9 | 2.130 |
| 3350. | 556.4 | 213. | 16.1 | .089 | -22.6 | -23.9 | 1.0 | 296.5 | 1.869 |
| 3655. | 533.5 | 214. | 18.0 | .062 | -25.1 | -26.5 | .8 | 297.0 | 1.835 |
| 3784. | 524.3 | | | | -26.1 | -27.7 | .7 | 297.3 | 2.053 |
| 3959. | 511.7 | 213. | 18.3 | .010 | -27.7 | -29.5 | .6 | 297.4 | .678 |
| 4125. | 500.0 | 211. | 18.5 | .012 | -29.2 | -31.1 | .6 | 297.6 | .785 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| | | |
|----------|----------|-------|
| DATE | TIME | PLACE |
| 01/03/77 | 15:00:00 | DPGWV |

| | | |
|------|----------|------------|
| HGT. | WIND DIR | WIND SPEED |
| (M) | (DEG) | (M/S) |

| | | |
|------|-------|-----|
| 76. | 23.0 | 5.2 |
| 146. | 19.0 | 4.0 |
| 204. | 13.0 | 3.9 |
| 259. | 4.0 | 4.0 |
| 314. | 353.0 | 4.0 |
| 369. | 346.0 | 3.8 |
| 424. | 340.0 | 2.8 |

RADIOSONDE DATE 02/03/77 TIME 06:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 859.3 | 300. | 7.2 | .000 | -3.0 | -3.5 | 3.4 | 282.7 | .000 |
| 86. | 850.0 | 318. | 13.6 | .744 | -3.3 | -4.4 | 3.2 | 283.3 | 6.203 |
| 224. | 835.3 | | | | -3.8 | -5.8 | 3.0 | 284.1 | 6.097 |
| 305. | 826.7 | 329. | 13.0 | -.027 | -4.5 | -6.4 | 2.9 | 284.2 | 1.032 |
| 609. | 795.1 | 335. | 15.5 | .082 | -7.1 | -8.3 | 2.6 | 284.5 | 1.162 |
| 914. | 764.7 | 337. | 18.0 | .082 | -9.7 | -10.2 | 2.3 | 284.9 | 1.087 |
| 974. | 758.8 | | | | -10.2 | -10.6 | 2.2 | 284.9 | 1.340 |
| 1219. | 734.8 | 342. | 19.5 | .049 | -11.7 | -12.4 | 2.0 | 285.9 | 3.874 |
| 1523. | 706.0 | 350. | 17.7 | -.059 | -13.6 | -14.5 | 1.8 | 287.0 | 3.761 |
| 1588. | 700.0 | 350. | 17.1 | -.092 | -14.0 | -15.0 | 1.7 | 287.3 | 3.818 |
| 1828. | 678.3 | 351. | 13.5 | -.150 | -15.4 | -16.7 | 1.5 | 288.3 | 4.174 |
| 2027. | 660.8 | | | | -16.6 | -18.1 | 1.4 | 289.1 | 3.956 |
| 2132. | 651.6 | 345. | 9.0 | -.148 | -17.5 | -18.9 | 1.3 | 289.2 | 1.242 |
| 2234. | 642.8 | | | | -18.4 | -19.7 | 1.2 | 289.3 | .905 |
| 2437. | 625.5 | 344. | 7.9 | -.036 | -20.0 | -21.3 | 1.1 | 289.7 | 2.028 |
| 2673. | 605.8 | | | | -21.9 | -23.3 | 1.0 | 290.2 | 1.877 |
| 2741. | 600.2 | 348. | 8.8 | .030 | -22.5 | -24.0 | .9 | 290.2 | 1.002 |
| 3046. | 575.7 | 355. | 10.8 | .066 | -25.1 | -27.2 | .7 | 290.6 | 1.304 |
| 3198. | 563.9 | | | | -26.4 | -28.9 | .6 | 290.8 | 1.269 |
| 3350. | 551.9 | 357. | 12.5 | .056 | -27.6 | -30.1 | .6 | 291.2 | 2.284 |
| 3655. | 528.8 | 351. | 13.9 | .046 | -30.1 | -32.5 | .5 | 291.7 | 1.850 |
| 3959. | 506.7 | 352. | 14.0 | .003 | -32.6 | -35.0 | .4 | 292.3 | 1.747 |
| 4053. | 500.0 | 352. | 14.1 | .011 | -33.4 | -35.7 | .4 | 292.4 | 1.440 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|----------|----------|-------|
| 02/03/77 | 15:00:00 | DPGWV |

| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
|-------------|-------------------|---------------------|
| 76. | 349.0 | 10.4 |
| 146. | 349.0 | 9.0 |
| 204. | 348.0 | 7.5 |
| 259. | 348.0 | 7.8 |
| 314. | 348.0 | 7.8 |
| 369. | 346.0 | 8.1 |
| 424. | 345.0 | 9.0 |
| 479. | 343.0 | 8.5 |
| 533. | 341.0 | 8.0 |
| 588. | 340.0 | 8.1 |
| 643. | 340.0 | 9.0 |
| 698. | 340.0 | 9.0 |
| 753. | 340.0 | 8.5 |
| 808. | 339.0 | 9.0 |
| 863. | 337.0 | 9.2 |
| 918. | 337.0 | 10.0 |
| 972. | 337.0 | 10.0 |
| 1027. | 336.0 | 9.9 |
| 1082. | 337.0 | 9.5 |
| 1137. | 337.0 | 17.5 |
| 1192. | 337.0 | 26.0 |

RADIO SCNDE DATE 03/03/77 TIME 05:00:00 LOCATION 0P6WV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (#10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTHV/DZ (#1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 865.2 | 300. | 1.6 | .000 | -10.2 | -12.4 | 1.7 | 274.4 | .000 |
| 81. | 856.3 | | | | -4.7 | -8.0 | 2.4 | 231.1 | 32.649 |
| 127. | 851.3 | | | | -2.7 | -6.6 | 2.3 | 283.6 | 55.467 |
| 139. | 850.0 | 296. | 2.8 | .086 | -2.7 | -9.2 | 2.2 | 283.7 | 8.825 |
| 173. | 846.3 | | | | -2.7 | -10.8 | 2.0 | 284.0 | 9.101 |
| 305. | 832.2 | 349. | 1.4 | -.084 | -3.7 | -11.7 | 1.9 | 234.3 | 2.230 |
| 609. | 800.4 | 337. | 2.3 | .030 | -5.8 | -13.5 | 1.7 | 285.2 | 3.000 |
| 914. | 769.8 | 326. | 4.4 | .069 | -7.9 | -15.4 | 1.5 | 286.1 | 2.949 |
| 1219. | 740.4 | 317. | 5.6 | .039 | -10.0 | -17.3 | 1.3 | 287.0 | 2.899 |
| 1262. | 736.2 | | | | -10.3 | -17.5 | 1.3 | 287.2 | 3.187 |
| 1523. | 711.5 | 307. | 3.9 | -.056 | -12.5 | -17.3 | 1.4 | 287.6 | 1.538 |
| 1648. | 700.0 | 303. | 6.2 | .184 | -13.6 | -17.3 | 1.4 | 287.7 | 1.024 |
| 1828. | 683.7 | 300. | 6.5 | .017 | -15.1 | -17.1 | 1.5 | 288.0 | 1.564 |
| 1854. | 681.3 | | | | -15.3 | -17.1 | 1.5 | 288.0 | 2.587 |
| 2090. | 660.3 | | | | -16.4 | -19.0 | 1.3 | 289.3 | 5.590 |
| 2132. | 656.6 | 306. | 7.2 | .023 | -16.4 | -20.0 | 1.2 | 289.8 | 10.661 |
| 2264. | 645.3 | | | | -16.3 | -23.0 | .9 | 291.3 | 11.438 |
| 2437. | 630.5 | 312. | 6.7 | -.016 | -17.3 | -26.1 | .7 | 292.1 | 4.396 |
| 2741. | 605.3 | 315. | 6.5 | -.007 | -19.0 | -31.5 | .4 | 293.5 | 4.658 |
| 2848. | 596.8 | | | | -19.6 | -33.3 | .4 | 294.0 | 4.503 |
| 3043. | 581.3 | | | | -19.8 | -36.6 | .2 | 295.6 | 10.029 |
| 3046. | 581.1 | 316. | 6.6 | .003 | -19.9 | -39.6 | .2 | 295.6 | -29.224 |
| 3350. | 557.3 | 317. | 7.5 | .030 | -22.3 | -39.0 | .2 | 296.6 | 2.390 |
| 3655. | 534.5 | 316. | 9.0 | .046 | -24.6 | -38.5 | .3 | 297.1 | 1.863 |
| 3959. | 512.6 | 313. | 9.9 | .030 | -27.2 | -37.9 | .3 | 297.8 | 2.223 |
| 4140. | 500.0 | 313. | 9.8 | -.006 | -28.7 | -37.6 | .3 | 298.1 | 1.663 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 03/03/77 | 13:00:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 154.0 | 2.2 |
| 146. | 132.0 | 1.8 |
| 204. | 123.0 | 1.8 |
| 259. | 140.0 | 2.1 |
| 314. | 170.0 | 1.9 |
| 369. | 214.0 | 1.6 |
| 424. | 250.0 | 1.3 |
| 479. | 286.0 | 1.2 |
| 533. | 318.0 | .9 |
| 588. | 348.0 | .7 |
| 643. | 21.0 | 1.0 |
| 698. | 31.0 | 1.4 |
| 753. | 13.0 | 1.3 |
| 808. | 351.0 | 1.3 |
| 863. | 343.0 | 1.2 |
| 918. | 332.0 | 1.4 |
| 972. | 320.0 | 1.4 |
| 1027. | 315.0 | 1.4 |

RADIOSONDE DATE 04/03/77 TIME 05:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 869.2 | 315. | 3.6 | .000 | -2.0 | -4.2 | 3.2 | 282.8 | .000 |
| 156. | 852.3 | | | | -2.2 | -4.9 | 3.1 | 284.2 | 8.747 |
| 178. | 850.0 | 340. | 8.8 | .292 | -2.3 | -5.0 | 3.1 | 284.3 | 5.096 |
| 305. | 836.4 | 352. | 8.3 | -.039 | -3.0 | -5.3 | 3.1 | 284.9 | 4.510 |
| 609. | 804.8 | 353. | 8.3 | .000 | -4.9 | -6.0 | 3.0 | 286.0 | 3.689 |
| 625. | 803.3 | | | | -5.0 | -6.0 | 3.0 | 286.0 | 2.934 |
| 914. | 773.9 | 359. | 8.8 | .016 | -7.2 | -8.3 | 2.6 | 286.6 | 2.162 |
| 1219. | 744.1 | 359. | 8.8 | .000 | -9.5 | -10.7 | 2.3 | 287.3 | 2.183 |
| 1523. | 715.5 | 354. | 9.6 | .026 | -11.8 | -13.1 | 1.9 | 288.0 | 2.129 |
| 1563. | 711.8 | | | | -12.1 | -13.4 | 1.9 | 288.1 | 2.244 |
| 1690. | 700.0 | 351. | 10.2 | .036 | -13.1 | -14.3 | 1.8 | 288.3 | 1.993 |
| 1828. | 687.4 | 349. | 10.7 | .036 | -14.3 | -15.3 | 1.7 | 288.4 | 1.047 |
| 2116. | 661.8 | | | | -16.6 | -17.4 | 1.5 | 289.0 | 1.801 |
| 2132. | 660.3 | 347. | 11.6 | .030 | -16.8 | -17.6 | 1.4 | 288.9 | -2.600 |
| 2437. | 633.9 | 348. | 12.2 | .020 | -19.5 | -22.8 | 1.0 | 289.2 | .743 |
| 2635. | 617.3 | | | | -21.2 | -26.1 | .7 | 289.4 | 1.060 |
| 2741. | 608.4 | 355. | 12.8 | .020 | -21.8 | -27.3 | .7 | 289.9 | 4.722 |
| 2828. | 601.3 | | | | -22.3 | -28.2 | .6 | 290.3 | 4.461 |
| 3046. | 583.6 | 1. | 13.7 | .030 | -23.6 | -31.0 | .5 | 291.2 | 4.362 |
| 3350. | 559.8 | 5. | 14.7 | .033 | -25.4 | -34.9 | .3 | 292.5 | 4.401 |
| 3428. | 553.8 | | | | -25.8 | -35.9 | .3 | 293.0 | 5.435 |
| 3655. | 536.6 | 3. | 15.2 | .016 | -27.5 | -37.7 | .3 | 293.6 | 2.713 |
| 3959. | 514.2 | 1. | 14.9 | -.010 | -29.7 | -40.0 | .2 | 294.5 | 3.066 |
| 4160. | 500.0 | 360. | 14.9 | .000 | -31.2 | -41.5 | .2 | 295.0 | 2.658 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 04/03/77 | 14:00:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 12.0 | 8.6 |
| 146. | 5.0 | 9.3 |
| 204. | 1.0 | 6.5 |
| 259. | 3.0 | 8.3 |
| 314. | 360.0 | 8.9 |
| 369. | 360.0 | 9.2 |
| 424. | 3.0 | 9.0 |
| 479. | 3.0 | 11.1 |
| 533. | 360.0 | 11.9 |
| 583. | 357.0 | 11.9 |
| 643. | 355.0 | 12.5 |
| 698. | 355.0 | 12.2 |
| 753. | 356.0 | 11.0 |
| 808. | 356.0 | 10.9 |
| 863. | 357.0 | 13.2 |
| 918. | 357.0 | 16.0 |
| 972. | 1.0 | 14.8 |
| 1027. | 4.0 | 11.8 |
| 1082. | 6.0 | 8.9 |
| 1137. | 12.0 | 8.0 |
| 1192. | 13.0 | 8.2 |
| 1247. | 8.0 | 9.0 |
| 1302. | 8.0 | 8.8 |
| 1356. | 8.0 | 8.5 |
| 1411. | 8.0 | 10.0 |

RADIOSONDE DATE 07/03/77 TIME 05:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 872.5 | 140. | 2.1 | .000 | 1.7 | -6.1 | 2.8 | 280.3 | .000 |
| 44. | 867.8 | | | | 4.0 | -8.3 | 2.3 | 289.0 | 62.894 |
| 213. | 850.0 | 185. | 8.3 | .291 | 7.1 | -12.5 | 1.7 | 293.9 | 28.739 |
| 230. | 848.3 | | | | 7.4 | -12.9 | 1.7 | 294.4 | 27.873 |
| 305. | 840.6 | 174. | 8.0 | -.033 | 7.2 | -13.6 | 1.6 | 294.9 | 7.257 |
| 609. | 809.9 | 204. | 7.5 | -.016 | 6.4 | -16.1 | 1.3 | 297.2 | 7.432 |
| 795. | 791.8 | | | | 5.8 | -17.6 | 1.2 | 298.4 | 6.781 |
| 914. | 780.4 | 225. | 7.5 | .000 | 6.0 | -17.4 | 1.2 | 299.9 | 12.288 |
| 957. | 776.3 | | | | 6.1 | -17.4 | 1.3 | 300.5 | 13.045 |
| 1219. | 751.5 | 239. | 7.3 | -.007 | 3.9 | -18.1 | 1.2 | 300.9 | 1.556 |
| 1523. | 723.6 | 245. | 7.4 | .003 | 1.3 | -19.1 | 1.2 | 301.3 | 1.344 |
| 1790. | 700.0 | 248. | 7.8 | .015 | -.9 | -19.8 | 1.1 | 301.7 | 1.599 |
| 1828. | 696.8 | 249. | 7.9 | .026 | -1.2 | -20.0 | 1.1 | 301.8 | 1.582 |
| 1985. | 683.3 | | | | -2.5 | -20.4 | 1.1 | 302.0 | 1.526 |
| 2132. | 670.5 | 258. | 8.7 | .026 | -3.7 | -22.2 | 1.0 | 302.3 | 1.804 |
| 2437. | 644.8 | 265. | 10.3 | .052 | -6.1 | -26.0 | .7 | 302.9 | 2.062 |
| 2741. | 620.1 | 262. | 10.3 | .000 | -8.5 | -29.8 | .5 | 303.5 | 2.022 |
| 3046. | 596.4 | 262. | 10.1 | -.007 | -10.9 | -33.5 | .4 | 304.1 | 1.942 |
| 3145. | 588.8 | | | | -11.7 | -34.7 | .3 | 304.3 | 1.813 |
| 3350. | 573.2 | 271. | 10.5 | .013 | -12.8 | -34.4 | .4 | 305.3 | 5.168 |
| 3483. | 563.3 | | | | -13.6 | -34.1 | .4 | 305.9 | 4.403 |
| 3655. | 550.6 | 279. | 12.0 | .049 | -14.9 | -33.5 | .4 | 306.4 | 2.706 |
| 3959. | 528.7 | 272. | 12.9 | .030 | -17.3 | -32.5 | .5 | 307.1 | 2.329 |
| 4263. | 507.7 | 264. | 13.7 | .026 | -19.7 | -31.5 | .5 | 307.8 | 2.234 |
| 4373. | 500.3 | | | | -20.6 | -31.1 | .6 | 308.0 | 1.847 |
| 4377. | 500.0 | 264. | 14.2 | .044 | -20.6 | -31.1 | .6 | 308.0 | 13.227 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 07/03/77 | 15:00:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 152.0 | 4.6 |
| 146. | 154.0 | 4.4 |
| 204. | 152.0 | 4.3 |
| 259. | 157.0 | 5.3 |
| 314. | 168.0 | 5.0 |
| 369. | 171.0 | 6.4 |
| 424. | 177.0 | 7.5 |
| 479. | 188.0 | 7.1 |
| 533. | 192.0 | 7.5 |
| 588. | 201.0 | 7.2 |
| 643. | 207.0 | 7.1 |
| 698. | 207.0 | 6.8 |
| 753. | 208.0 | 6.0 |
| 808. | 211.0 | 6.9 |
| 863. | 215.0 | 7.5 |
| 918. | 226.0 | 7.0 |
| 972. | 232.0 | 6.1 |
| 1027. | 221.0 | 9.0 |
| 1082. | 215.0 | 12.0 |
| 1137. | 219.0 | 12.0 |
| 1192. | 224.0 | 9.9 |
| 1247. | 232.0 | 8.0 |
| 1302. | 237.0 | 7.9 |
| 1356. | 235.0 | 7.8 |
| 1411. | 244.0 | 8.2 |
| 1466. | 245.0 | 8.8 |
| 1521. | 240.0 | 8.1 |
| 1576. | 237.0 | 8.0 |
| 1631. | 238.0 | 8.0 |
| 1686. | 237.0 | 7.9 |
| 1741. | 236.0 | 8.5 |
| 1796. | 235.0 | 10.0 |
| 1851. | 235.0 | 9.8 |
| 1905. | 235.0 | 10.2 |
| 1960. | 247.0 | 11.0 |
| 2015. | 263.0 | 11.6 |

RADIOSONDE DATE 08/03/77 TIME 05:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | WV (GM/KG) | THV* (DEG K) | DTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 866.8 | 90. | 2.5 | .000 | 5.2 | -8.6 | 2.3 | 290.4 | .000 |
| 28. | 863.8 | | | | 9.2 | -14.8 | 1.4 | 294.7 | 153.688 |
| 130. | 853.3 | | | | 10.5 | -17.1 | 1.2 | 297.0 | 23.061 |
| 162. | 850.0 | 211. | 8.6 | .377 | 10.7 | -17.4 | 1.1 | 297.6 | 16.702 |
| 223. | 843.3 | | | | 11.0 | -18.1 | 1.1 | 298.5 | 15.218 |
| 305. | 835.5 | 200. | 8.2 | -.028 | 10.6 | -18.4 | 1.1 | 298.9 | 5.130 |
| 609. | 805.2 | 220. | 10.1 | .062 | 8.9 | -19.3 | 1.0 | 300.3 | 4.464 |
| 914. | 776.1 | 238. | 10.7 | .020 | 7.1 | -20.3 | 1.0 | 301.5 | 4.040 |
| 1084. | 760.3 | | | | 6.2 | -20.8 | 1.0 | 302.3 | 4.711 |
| 1219. | 747.6 | 253. | 11.3 | .020 | 5.1 | -21.8 | .9 | 302.0 | 1.865 |
| 1523. | 719.9 | 264. | 12.3 | .033 | 6.2 | -20.8 | 1.0 | 307.1 | 14.856 |
| 1749. | 700.0 | 269. | 13.3 | .044 | .6 | -25.6 | .7 | 303.3 | -16.792 |
| 1828. | 693.2 | 271. | 13.7 | .051 | -.1 | -26.1 | .6 | 303.4 | .833 |
| 2132. | 667.5 | 269. | 14.6 | .030 | -2.7 | -28.3 | .5 | 303.7 | 1.175 |
| 2158. | 665.3 | | | | -2.9 | -28.5 | .5 | 303.8 | 2.328 |
| 2437. | 641.9 | 265. | 17.0 | .079 | -5.2 | -29.4 | .5 | 304.3 | 1.828 |
| 2741. | 617.3 | 260. | 20.7 | .122 | -7.7 | -30.5 | .5 | 304.8 | 1.786 |
| 3046. | 593.7 | 256. | 23.0 | .075 | -10.2 | -31.5 | .5 | 305.3 | 1.670 |
| 3236. | 579.3 | | | | -11.7 | -32.2 | .4 | 305.7 | 2.074 |
| 3350. | 570.7 | 253. | 22.5 | -.016 | -12.7 | -34.1 | .4 | 305.8 | 1.083 |
| 3450. | 563.3 | | | | -13.5 | -35.7 | .3 | 306.0 | 1.915 |
| 3655. | 548.2 | 249. | 21.7 | -.026 | -15.4 | -35.8 | .3 | 306.2 | 2.244 |
| 3959. | 526.4 | 249. | 22.6 | .030 | -18.1 | -35.9 | .3 | 306.5 | 1.086 |
| 4141. | 513.8 | | | | -19.7 | -36.0 | .3 | 306.7 | 1.077 |
| 4263. | 505.4 | 248. | 23.5 | .030 | -20.7 | -36.0 | .6 | 307.0 | 2.345 |
| 4343. | 500.0 | 248. | 23.3 | -.025 | -21.3 | -26.2 | .9 | 307.2 | 3.301 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 08/03/77 | 13:00:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 32.0 | 3.5 |
| 146. | 32.0 | 3.0 |
| 204. | 29.0 | 2.6 |
| 259. | 22.0 | 3.4 |
| 314. | 23.0 | 4.2 |
| 369. | 19.0 | 4.6 |
| 424. | 7.0 | 4.8 |
| 479. | 354.0 | 4.2 |
| 533. | 353.0 | 3.7 |
| 588. | 344.0 | 3.5 |
| 643. | 343.0 | 3.5 |
| 698. | 342.0 | 3.5 |
| 753. | 344.0 | 3.8 |
| 808. | 344.0 | 4.0 |
| 863. | 342.0 | 3.8 |
| 918. | 335.0 | 3.2 |
| 972. | 325.0 | 3.2 |
| 1027. | 319.0 | 3.9 |
| 1082. | 314.0 | 4.0 |
| 1137. | 312.0 | 4.0 |
| 1192. | 310.0 | 4.0 |
| 1247. | 310.0 | 3.8 |
| 1302. | 314.0 | 4.0 |
| 1356. | 314.0 | 4.0 |
| 1411. | 314.0 | 3.9 |
| 1466. | 323.0 | 3.8 |
| 1521. | 303.0 | 4.0 |
| 1576. | 283.0 | 5.1 |
| 1631. | 278.0 | 5.2 |
| 1686. | 276.0 | 4.9 |
| 1741. | 278.0 | 4.0 |
| 1796. | 277.0 | 4.8 |
| 1851. | 275.0 | 5.0 |
| 1905. | 275.0 | 5.1 |
| 1960. | 276.0 | 5.8 |

RADIOSONDE DATE 09/03/77 TIME 05:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | OTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 861.1 | 145. | 5.1 | .000 | 6.6 | -7.7 | 2.5 | 292.4 | .000 |
| 99. | 850.8 | | | | 8.9 | -11.4 | 1.9 | 295.7 | 33.444 |
| 107. | 850.0 | 199. | 9.2 | .383 | 9.0 | -11.6 | 1.8 | 295.9 | 22.421 |
| 197. | 840.8 | | | | 9.9 | -13.5 | 1.6 | 297.7 | 20.272 |
| 305. | 829.9 | 194. | 8.9 | -.015 | 9.4 | -14.5 | 1.5 | 298.3 | 5.239 |
| 609. | 799.9 | 215. | 10.6 | .056 | 8.0 | -17.3 | 1.2 | 299.9 | 5.313 |
| 725. | 788.8 | | | | 7.5 | -18.4 | 1.1 | 300.6 | 5.589 |
| 914. | 770.8 | 228. | 11.2 | .020 | 6.3 | -19.3 | 1.1 | 301.3 | 3.631 |
| 1105. | 753.0 | | | | 5.0 | -20.2 | 1.0 | 301.9 | 3.133 |
| 1219. | 742.6 | 238. | 11.5 | .010 | 5.0 | -19.8 | 1.1 | 303.1 | 10.635 |
| 1255. | 739.3 | | | | 5.0 | -19.7 | 1.1 | 303.5 | 10.802 |
| 1523. | 714.9 | 245. | 12.0 | .016 | 2.6 | -20.2 | 1.1 | 303.7 | 1.050 |
| 1692. | 700.0 | 247. | 12.4 | .024 | 1.1 | -20.5 | 1.1 | 303.9 | 1.018 |
| 1828. | 688.3 | 248. | 12.8 | .029 | -.1 | -20.7 | 1.1 | 304.0 | .973 |
| 2132. | 662.6 | 248. | 15.8 | .099 | -2.8 | -21.3 | 1.0 | 304.3 | .937 |
| 2307. | 648.3 | | | | -4.3 | -21.6 | 1.0 | 304.5 | 1.171 |
| 2437. | 637.5 | 247. | 19.2 | .111 | -5.5 | -21.5 | 1.1 | 304.6 | .815 |
| 2741. | 612.9 | 247. | 19.1 | -.003 | -8.1 | -21.4 | 1.1 | 305.1 | 1.530 |
| 3046. | 589.2 | 246. | 17.1 | -.066 | -10.8 | -21.3 | 1.2 | 305.4 | 1.075 |
| 3350. | 566.4 | 241. | 18.5 | .046 | -13.5 | -21.2 | 1.2 | 305.7 | .983 |
| 3517. | 554.3 | | | | -14.9 | -21.1 | 1.3 | 306.0 | 1.452 |
| 3655. | 544.3 | 237. | 18.6 | .003 | -16.3 | -20.9 | 1.3 | 305.9 | -.445 |
| 3893. | 527.3 | | | | -18.6 | -20.6 | 1.4 | 306.0 | .165 |
| 3959. | 522.6 | 241. | 20.6 | .066 | -18.7 | -20.1 | 1.5 | 306.6 | 10.274 |
| 4072. | 514.8 | | | | -19.0 | -19.2 | 1.6 | 307.6 | 8.721 |
| 4263. | 501.7 | 244. | 23.3 | .089 | -20.1 | -20.3 | 1.5 | 308.5 | 4.788 |
| 4288. | 500.0 | 243. | 22.1 | -.480 | -20.2 | -20.5 | 1.5 | 308.7 | 6.946 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|----------|----------|-------|
| 09/03/77 | 16:00:00 | DPGWV |

| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
|-------------|-------------------|---------------------|
| 76. | 267.0 | 12.8 |
| 146. | 265.0 | 9.1 |
| 204. | 256.0 | 5.9 |
| 259. | 252.0 | 8.5 |
| 314. | 221.0 | 3.3 |
| 369. | 226.0 | 2.5 |
| 424. | 250.0 | 7.0 |
| 479. | 254.0 | 8.0 |
| 533. | 257.0 | 7.0 |
| 588. | 257.0 | 5.0 |
| 643. | 260.0 | 3.4 |
| 698. | 256.0 | 7.0 |
| 753. | 256.0 | 12.9 |
| 808. | 259.0 | 11.2 |
| 863. | 257.0 | 22.9 |
| 918. | 256.0 | 29.9 |
| 972. | 256.0 | 33.0 |
| 1027. | 258.0 | 40.0 |
| 1082. | 261.0 | 38.0 |
| 1137. | 266.0 | 36.0 |
| 1192. | 267.0 | 35.6 |
| 1247. | 268.0 | 18.0 |
| 1302. | 268.0 | 8.0 |

Note: Radiosonde data for the morning of 10/03/77 was not obtained.

PILOT BALLOON DATA

| | | |
|----------|----------|-------|
| DATE | TIME | PLACE |
| 10/03/77 | 13:00:00 | DPGWV |

| HGT. | WIND DIR | WIND SPEED |
|------|----------|------------|
| (M) | (DEG) | (M/S) |
| 76. | 345.0 | 16.0 |
| 146. | 345.0 | 20.0 |
| 204. | 346.0 | 23.0 |
| 259. | 345.0 | 23.0 |
| 314. | 346.0 | 21.5 |
| 369. | 347.0 | 16.5 |
| 424. | 350.0 | 11.0 |
| 479. | 349.0 | 11.9 |
| 533. | 348.0 | 13.0 |
| 588. | 348.0 | 12.5 |
| 643. | 347.0 | 10.0 |
| 698. | 348.0 | 23.0 |
| 753. | 348.0 | 38.0 |

RADIOSONDE DATE 11/03/77 TIME 05:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV# (DEG K) | DTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 877.2 | 360. | 3.0 | | -4.4 | -9.6 | 2.1 | 279.4 | .000 |
| 85. | 867.8 | | | | -3.9 | -10.3 | 2.0 | 280.7 | 16.092 |
| 249. | 850.0 | 348. | 12.6 | .039 | -3.7 | -11.7 | 1.8 | 282.6 | 11.272 |
| 278. | 846.8 | | | | -3.6 | -12.0 | 1.8 | 283.0 | 13.917 |
| 305. | 844.0 | 356. | 12.4 | -.036 | -3.8 | -12.5 | 1.7 | 283.0 | 1.730 |
| 377. | 836.3 | | | | -4.2 | -13.8 | 1.6 | 283.3 | 4.081 |
| 496. | 823.8 | | | | -4.1 | -13.7 | 1.6 | 284.7 | 11.220 |
| 609. | 812.0 | 4. | 13.4 | .033 | -4.8 | -14.3 | 1.5 | 285.1 | 3.750 |
| 901. | 782.3 | | | | -6.6 | -16.0 | 1.4 | 286.2 | 3.750 |
| 1027. | 769.8 | | | | -6.9 | -16.2 | 1.4 | 287.2 | 7.918 |
| 1219. | 751.0 | 10. | 14.4 | .016 | -8.4 | -17.5 | 1.3 | 287.6 | 2.024 |
| 1431. | 730.8 | | | | -10.0 | -18.9 | 1.2 | 288.1 | 2.264 |
| 1523. | 722.0 | 8. | 14.5 | .003 | -10.8 | -20.0 | 1.1 | 288.2 | 1.138 |
| 1760. | 700.0 | 8. | 15.0 | .021 | -12.9 | -22.8 | .9 | 288.4 | .835 |
| 1828. | 693.8 | 9. | 15.1 | .015 | -13.5 | -23.6 | .8 | 288.4 | .866 |
| 1944. | 683.3 | | | | -14.5 | -25.0 | .7 | 288.6 | 1.120 |
| 2132. | 666.5 | 9. | 15.3 | .007 | -15.4 | -30.3 | .5 | 289.6 | 5.331 |
| 2382. | 644.8 | | | | -16.5 | -37.4 | .2 | 291.0 | 5.869 |
| 2437. | 640.1 | 7. | 16.0 | .023 | -16.9 | -37.8 | .2 | 291.2 | 2.794 |
| 2741. | 614.5 | 6. | 15.6 | -.013 | -19.3 | -39.8 | .2 | 291.8 | 2.150 |
| 2823. | 607.8 | | | | -20.0 | -40.4 | .2 | 291.9 | 1.311 |
| 2934. | 598.8 | | | | -20.3 | -41.2 | .2 | 292.8 | 8.096 |
| 3040. | 590.3 | 10. | 18.1 | .084 | -18.6 | -40.6 | .2 | 296.0 | 29.992 |
| 3252. | 573.8 | | | | -18.1 | -40.2 | .2 | 299.0 | 14.144 |
| 3357. | 565.8 | 14. | 21.6 | .110 | -16.6 | -39.4 | .2 | 302.0 | 28.308 |
| 3573. | 549.8 | | | | -16.7 | -39.5 | .2 | 304.4 | 10.971 |
| 3788. | 534.2 | | | | -18.0 | -40.4 | .2 | 305.3 | 4.455 |
| 3822. | 531.8 | | | | -17.6 | -40.1 | .2 | 306.2 | 25.709 |
| 3935. | 523.8 | | | | -17.6 | -40.1 | .2 | 307.5 | 11.777 |
| 4263. | 500.0 | 9. | 36.9 | .169 | -19.2 | -42.3 | .2 | 309.7 | 6.583 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 11/03/77 | 15:00:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 339.0 | 5.2 |
| 146. | 339.0 | 2.8 |
| 204. | 343.0 | 2.4 |
| 259. | 351.0 | 3.0 |
| 314. | 348.0 | 3.3 |
| 369. | 349.0 | 4.2 |
| 424. | 351.0 | 5.2 |
| 479. | 352.0 | 4.5 |
| 533. | 355.0 | 3.8 |
| 588. | 359.0 | 5.1 |
| 643. | 4.0 | 6.0 |
| 698. | 4.0 | 5.5 |
| 753. | 2.0 | 4.5 |
| 808. | 6.0 | 4.1 |
| 863. | 12.0 | 4.7 |
| 918. | 16.0 | 4.7 |
| 972. | 17.0 | 4.6 |
| 1027. | 20.0 | 5.5 |
| 1082. | 23.0 | 5.1 |
| 1137. | 8.0 | 4.8 |
| 1192. | 15.0 | 5.0 |
| 1247. | 12.0 | 5.5 |
| 1302. | 5.0 | 6.3 |
| 1356. | 5.0 | 7.0 |
| 1411. | 19.0 | 8.0 |
| 1466. | 26.0 | 8.9 |
| 1521. | 26.0 | 10.0 |
| 1576. | 26.0 | 11.0 |
| 1631. | 27.0 | 13.0 |
| 1686. | 27.0 | 13.2 |
| 1741. | 22.0 | 13.0 |
| 1796. | 25.0 | 15.0 |
| 1851. | 31.0 | 16.0 |

| RADIO SCNDE | | DATE | 14/03/77 | TIME | 05:00:30 | LOCATION | DPGWN | | | | |
|-------------|-------|----------|----------|-------|----------|----------|---------|---------|---------|--|--|
| Z | PRESS | WIND DIR | U | DU/DZ | TEMP | DEWPT | MR | THV* | DTHV/DZ | | |
| (M) | (MB) | (DEG) | (M/S) | (*10) | (DEG C) | (DEG C) | (GM/KG) | (DEG K) | (*1000) | | |
| 0. | 861.9 | 305. | 2.1 | .000 | -5.2 | -11.7 | 1.8 | 279.9 | .000 | | |
| 110. | 850.0 | 316. | 5.1 | .273 | -3.3 | -10.5 | 2.0 | 283.0 | 28.583 | | |
| 130. | 847.8 | | | | -3.0 | -10.2 | 2.1 | 283.6 | 26.707 | | |
| 305. | 829.3 | 342. | 4.1 | -.051 | -3.1 | -11.5 | 1.9 | 285.2 | 9.492 | | |
| 337. | 826.3 | | | | -3.1 | -11.7 | 1.9 | 285.5 | 9.115 | | |
| 609. | 797.9 | 341. | 4.1 | .000 | -5.1 | -13.6 | 1.7 | 286.2 | 2.565 | | |
| 610. | 797.9 | | | | -5.1 | -13.6 | 1.7 | 286.2 | .000 | | |
| 914. | 767.4 | 327. | 2.5 | -.052 | -7.7 | -16.7 | 1.3 | 286.6 | 1.131 | | |
| 915. | 767.3 | | | | -7.7 | -16.7 | 1.3 | 286.6 | 10.712 | | |
| 1219. | 737.7 | 326. | 2.7 | .007 | -10.7 | -16.7 | 1.4 | 286.6 | -.077 | | |
| 1381. | 722.3 | | | | -12.3 | -16.8 | 1.4 | 286.5 | -.124 | | |
| 1523. | 708.9 | 340. | 4.0 | .043 | -13.4 | -19.2 | 1.2 | 286.8 | 1.986 | | |
| 1620. | 700.0 | 343. | 4.4 | .041 | -14.2 | -20.9 | 1.0 | 287.0 | 1.296 | | |
| 1781. | 685.3 | | | | -15.4 | -23.7 | .8 | 287.3 | 2.315 | | |
| 1828. | 681.1 | 328. | 5.1 | .034 | -15.6 | -26.8 | .6 | 287.6 | 5.269 | | |
| 2061. | 660.3 | | | | -16.4 | -42.2 | .1 | 289.1 | 6.764 | | |
| 2132. | 654.0 | 304. | 6.6 | .049 | -17.0 | -40.9 | .2 | 289.3 | 1.693 | | |
| 2437. | 627.8 | 296. | 7.4 | .026 | -19.6 | -35.3 | .3 | 289.7 | 1.495 | | |
| 2666. | 608.8 | | | | -21.6 | -31.0 | .5 | 290.0 | 1.233 | | |
| 2741. | 602.5 | 293. | 7.4 | .000 | -22.2 | -31.0 | .5 | 290.2 | 2.282 | | |
| 3046. | 577.9 | 284. | 7.1 | -.010 | -25.0 | -30.8 | .5 | 290.4 | .686 | | |
| 3175. | 567.8 | | | | -26.1 | -30.7 | .5 | 290.6 | 1.370 | | |
| 3350. | 554.1 | 267. | 8.8 | .056 | -27.4 | -32.0 | .5 | 291.1 | 2.791 | | |
| 3655. | 531.1 | 257. | 11.7 | .095 | -29.5 | -34.2 | .4 | 292.1 | 3.344 | | |
| 3686. | 528.8 | | | | -29.7 | -34.4 | .4 | 292.2 | 3.924 | | |
| 3959. | 508.8 | 255. | 13.6 | .062 | -32.2 | -36.9 | .3 | 292.4 | .707 | | |
| 4083. | 500.0 | 255. | 13.3 | -.024 | -33.3 | -38.0 | .3 | 292.5 | .936 | | |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 14/03/77 | 13:00:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 329.0 | 3.6 |
| 146. | 330.0 | 5.8 |
| 204. | 331.0 | 7.0 |
| 259. | 331.0 | 6.7 |
| 314. | 332.0 | 5.7 |
| 369. | 329.0 | 4.4 |
| 424. | 329.0 | 3.7 |
| 479. | 330.0 | 4.7 |
| 533. | 331.0 | 5.9 |
| 588. | 329.0 | 4.8 |
| 643. | 310.0 | 3.0 |
| 698. | 306.0 | 2.1 |
| 753. | 323.0 | 3.4 |
| 808. | 320.0 | 5.2 |
| 863. | 310.0 | 4.1 |
| 918. | 270.0 | 2.1 |
| 972. | 218.0 | 2.5 |
| 1027. | 219.0 | 2.0 |
| 1082. | 266.0 | 1.3 |
| 1137. | 276.0 | 2.1 |
| 1192. | 291.0 | 3.9 |
| 1247. | 299.0 | 5.0 |
| 1302. | 292.0 | 4.5 |
| 1356. | 290.0 | 4.0 |
| 1411. | 290.0 | 3.9 |
| 1466. | 290.0 | 3.8 |

RADIOSONDE DATE 15/03/77 TIME 05:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | OTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 868.8 | 110. | 2.6 | .000 | -6.6 | -15.3 | 1.3 | 277.7 | .000 |
| 92. | 858.7 | | | | -1.3 | -11.9 | 1.8 | 284.3 | 71.183 |
| 144. | 853.2 | | | | -.2 | -12.0 | 1.8 | 285.9 | 32.207 |
| 173. | 850.0 | 201. | 4.9 | .133 | -.4 | -12.1 | 1.8 | 286.0 | 3.324 |
| 305. | 836.1 | 175. | 4.9 | .000 | -1.2 | -12.6 | 1.7 | 286.5 | 3.801 |
| 609. | 804.6 | 183. | 6.5 | .053 | -3.1 | -13.6 | 1.7 | 287.7 | 3.710 |
| 883. | 777.3 | | | | -4.8 | -14.6 | 1.6 | 288.7 | 3.692 |
| 914. | 774.2 | 193. | 7.4 | .030 | -5.0 | -14.8 | 1.6 | 288.8 | 3.589 |
| 1219. | 744.3 | 204. | 7.9 | .016 | -7.3 | -16.9 | 1.4 | 289.5 | 2.398 |
| 1523. | 775.7 | 210. | 8.4 | .016 | -9.6 | -18.9 | 1.1 | 283.6 | -19.480 |
| 1695. | 700.0 | 210. | 8.6 | .012 | -10.9 | -20.1 | 1.1 | 290.6 | 40.766 |
| 1828. | 688.1 | 211. | 8.6 | .000 | -11.9 | -21.0 | 1.0 | 290.9 | 2.281 |
| 1939. | 678.2 | | | | -12.8 | -21.8 | 1.0 | 291.1 | 1.729 |
| 2132. | 661.0 | 213. | 8.4 | -.007 | -14.6 | -22.9 | .9 | 291.2 | .555 |
| 2437. | 634.6 | 223. | 7.1 | -.043 | -17.3 | -24.7 | .8 | 291.5 | 1.047 |
| 2741. | 609.3 | 229. | 6.8 | -.010 | -20.1 | -26.5 | .7 | 291.7 | .551 |
| 3037. | 585.7 | | | | -22.8 | -28.2 | .6 | 291.9 | .515 |
| 3046. | 585.0 | 233. | 8.2 | .046 | -22.8 | -28.3 | .6 | 292.0 | 10.991 |
| 3350. | 561.2 | 236. | 9.6 | .046 | -23.3 | -31.1 | .5 | 294.8 | 9.461 |
| 3363. | 560.2 | | | | -23.3 | -31.2 | .5 | 295.0 | 11.517 |
| 3593. | 542.8 | | | | -24.8 | -35.0 | .4 | 295.8 | 3.744 |
| 3655. | 538.2 | 238. | 11.0 | .046 | -25.2 | -33.7 | .4 | 296.1 | 4.077 |
| 3901. | 520.2 | | | | -27.1 | -28.5 | .7 | 296.8 | 2.665 |
| 3959. | 516.0 | 241. | 12.1 | .036 | -27.4 | -29.0 | .7 | 297.1 | 5.541 |
| 4186. | 500.0 | 242. | 12.2 | .004 | -28.5 | -30.9 | .6 | 298.4 | 5.858 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 15/03/77 | 15:00:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 185.0 | 5.4 |
| 146. | 186.0 | 4.3 |
| 204. | 190.0 | 3.8 |
| 259. | 193.0 | 5.8 |
| 314. | 191.0 | 7.0 |
| 369. | 189.0 | 6.5 |
| 424. | 180.0 | 5.9 |
| 479. | 172.0 | 5.0 |
| 533. | 178.0 | 4.1 |
| 588. | 188.0 | 5.2 |
| 643. | 180.0 | 5.4 |
| 698. | 179.0 | 5.2 |
| 753. | 183.0 | 5.0 |
| 808. | 185.0 | 4.9 |
| 863. | 187.0 | 4.2 |
| 918. | 183.0 | 3.0 |
| 972. | 180.0 | 2.0 |
| 1027. | 175.0 | 1.8 |
| 1082. | 174.0 | 2.2 |
| 1137. | 172.0 | 2.8 |
| 1192. | 162.0 | 2.9 |
| 1247. | 162.0 | 3.9 |
| 1302. | 170.0 | 4.0 |
| 1356. | 183.0 | 4.7 |
| 1411. | 188.0 | 5.2 |
| 1466. | 196.0 | 4.9 |
| 1521. | 199.0 | 4.8 |
| 1576. | 197.0 | 5.8 |
| 1631. | 196.0 | 7.7 |
| 1686. | 199.0 | 6.8 |
| 1741. | 217.0 | 5.0 |
| 1796. | 224.0 | 6.9 |
| 1851. | 227.0 | 7.9 |
| 1905. | 232.0 | 9.0 |
| 1960. | 234.0 | 9.0 |
| 2015. | 236.0 | 10.0 |

RADIO SCNDE DATE 16/03/77 TIME 05:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | OTHV/DZ |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|---------|
| 0. | 865.6 | 190. | 1.0 | .000 | -3.6 | -12.5 | 1.7 | 281.2 | .000 |
| 77. | 857.3 | | | | -.4 | -13.9 | 1.5 | 285.3 | 53.173 |
| 145. | 857.0 | 246. | 3.7 | .186 | -.2 | -14.9 | 1.4 | 285.5 | 3.190 |
| 175. | 846.8 | | | | -.1 | -15.4 | 1.4 | 286.6 | 35.908 |
| 232. | 840.8 | | | | .0 | -16.2 | 1.3 | 287.3 | 11.839 |
| 305. | 833.2 | 211. | 2.2 | -.094 | 1.9 | -23.3 | .7 | 289.9 | 36.269 |
| 349. | 828.7 | | | | 3.1 | -27.7 | .5 | 291.6 | 38.082 |
| 609. | 802.2 | 198. | 3.6 | .046 | -1.2 | -27.8 | .5 | 289.7 | -7.139 |
| 914. | 772.2 | 198. | 5.0 | .046 | -1.0 | -27.8 | .5 | 293.1 | 11.129 |
| 1150. | 749.8 | | | | -2.7 | -27.9 | .5 | 293.8 | 2.685 |
| 1219. | 743.3 | 206. | 6.0 | .033 | -3.1 | -28.1 | .5 | 294.1 | 4.289 |
| 1523. | 715.0 | 217. | 6.5 | .016 | -4.9 | -29.0 | .5 | 295.4 | 4.266 |
| 1571. | 710.8 | | | | -5.1 | -29.1 | .5 | 295.6 | 5.775 |
| 1689. | 700.0 | 222. | 6.7 | .012 | -6.1 | -29.5 | .5 | 295.8 | 1.591 |
| 1828. | 687.6 | 225. | 7.0 | .022 | -7.3 | -29.9 | .5 | 296.0 | 1.283 |
| 2132. | 660.9 | 228. | 8.2 | .039 | -9.8 | -30.8 | .4 | 296.6 | 1.819 |
| 2437. | 635.4 | 224. | 10.4 | .072 | -12.3 | -31.6 | .4 | 297.1 | 1.660 |
| 2697. | 614.3 | | | | -14.4 | -32.4 | .4 | 297.5 | 1.789 |
| 2741. | 610.7 | 223. | 12.4 | .066 | -14.8 | -32.5 | .4 | 297.6 | .899 |
| 3046. | 586.4 | 223. | 14.8 | .079 | -17.4 | -33.2 | .4 | 298.0 | 1.456 |
| 3255. | 570.3 | | | | -19.2 | -33.7 | .4 | 298.3 | 1.276 |
| 3350. | 563.1 | 223. | 19.0 | .138 | -19.6 | -38.7 | .2 | 298.9 | 6.180 |
| 3473. | 553.8 | | | | -20.2 | -45.2 | .1 | 299.6 | 5.652 |
| 3655. | 540.4 | 224. | 24.0 | .164 | -20.9 | -40.2 | .2 | 300.8 | 7.074 |
| 3731. | 534.8 | | | | -21.2 | -38.1 | .3 | 301.4 | 7.219 |
| 3955. | 518.8 | | | | -21.9 | -39.0 | .2 | 303.2 | 7.956 |
| 3959. | 518.5 | 223. | 29.4 | .178 | -22.0 | -38.7 | .3 | 303.1 | -17.265 |
| 4070. | 510.8 | | | | -22.9 | -29.2 | .7 | 303.4 | 2.561 |
| 4226. | 500.0 | 222. | 32.2 | .105 | -23.7 | -30.0 | .6 | 304.3 | 5.626 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 16/03/77 | 15:07:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 9.0 | 3.9 |
| 146. | 5.0 | 2.8 |
| 204. | 359.0 | 1.2 |
| 259. | 243.0 | .3 |
| 314. | 202.0 | 1.2 |
| 369. | 205.0 | 2.2 |
| 424. | 215.0 | 3.0 |
| 479. | 216.0 | 3.6 |
| 533. | 208.0 | 4.3 |
| 588. | 201.0 | 4.8 |
| 643. | 196.0 | 4.7 |
| 698. | 196.0 | 4.8 |
| 753. | 197.0 | 5.1 |
| 808. | 200.0 | 5.3 |
| 863. | 203.0 | 5.5 |
| 918. | 202.0 | 5.9 |
| 972. | 201.0 | 6.0 |
| 1027. | 201.0 | 6.1 |
| 1082. | 203.0 | 5.8 |
| 1137. | 205.0 | 5.5 |
| 1192. | 207.0 | 6.8 |
| 1247. | 212.0 | 7.0 |
| 1302. | 214.0 | 6.2 |
| 1356. | 218.0 | 7.5 |
| 1411. | 218.0 | 8.2 |

RADIOSONDE DATE 17/03/77 TIME 05:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 855.6 | 215. | 3.1 | .000 | 2.4 | -4.6 | 3.2 | 288.7 | .000 |
| 53. | 850.0 | 231. | 10.7 | 1.434 | 2.7 | -8.7 | 2.3 | 289.4 | 13.363 |
| 74. | 847.8 | | | | 2.8 | -10.4 | 2.0 | 289.7 | 12.798 |
| 165. | 838.3 | | | | 3.7 | -8.6 | 2.4 | 291.6 | 21.352 |
| 305. | 824.0 | 220. | 8.0 | -.107 | 3.0 | -9.2 | 2.3 | 292.3 | 4.893 |
| 496. | 804.8 | | | | 2.0 | -9.9 | 2.2 | 293.2 | 4.707 |
| 609. | 793.3 | 223. | 7.4 | -.020 | .9 | -10.4 | 2.2 | 293.2 | .198 |
| 914. | 763.5 | 232. | 6.7 | -.023 | -2.0 | -12.0 | 2.0 | 293.3 | .190 |
| 1219. | 734.7 | 248. | 6.1 | -.020 | -4.9 | -13.5 | 1.8 | 293.3 | .142 |
| 1448. | 713.8 | | | | -7.1 | -14.6 | 1.7 | 293.3 | -.061 |
| 1523. | 706.8 | 265. | 5.7 | -.013 | -7.8 | -14.6 | 1.7 | 293.4 | .761 |
| 1598. | 700.0 | 266. | 5.7 | .000 | -8.5 | -14.6 | 1.8 | 293.4 | .523 |
| 1828. | 679.4 | 268. | 5.5 | -.009 | -10.5 | -14.5 | 1.8 | 293.7 | 1.275 |
| 2132. | 653.1 | 286. | 5.6 | .003 | -13.2 | -14.5 | 1.9 | 294.0 | .970 |
| 2207. | 646.8 | | | | -13.8 | -14.5 | 1.9 | 294.1 | 1.854 |
| 2437. | 627.4 | 305. | 5.3 | -.010 | -15.3 | -15.7 | 1.8 | 295.0 | 3.626 |
| 2665. | 608.8 | | | | -16.7 | -16.8 | 1.7 | 295.9 | 4.013 |
| 2741. | 602.6 | 319. | 5.0 | -.010 | -17.3 | -17.6 | 1.6 | 296.0 | 2.056 |
| 3046. | 578.4 | 307. | 4.9 | -.003 | -19.7 | -20.7 | 1.3 | 296.7 | 2.043 |
| 3211. | 565.8 | | | | -21.0 | -22.3 | 1.1 | 297.0 | 1.926 |
| 3350. | 555.2 | 288. | 6.5 | .053 | -22.1 | -24.3 | 1.0 | 297.2 | 2.000 |
| 3429. | 549.3 | | | | -22.7 | -25.4 | .9 | 297.4 | 2.307 |
| 3655. | 532.5 | 297. | 8.3 | .059 | -24.6 | -26.8 | .8 | 297.8 | 1.605 |
| 3954. | 511.0 | | | | -27.1 | -28.7 | .7 | 298.3 | 1.611 |
| 3959. | 510.7 | 293. | 8.2 | -.003 | -27.1 | -28.8 | .7 | 298.3 | 9.798 |
| 4110. | 500.0 | 289. | 8.0 | -.013 | -28.4 | -31.7 | .5 | 298.5 | 1.312 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 17/03/77 | 13:30:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 319.0 | 8.3 |
| 146. | 322.0 | 5.8 |
| 204. | 323.0 | 5.3 |
| 259. | 319.0 | 8.7 |
| 314. | 319.0 | 9.2 |
| 369. | 319.0 | 9.6 |
| 424. | 320.0 | 9.3 |
| 479. | 323.0 | 8.5 |
| 533. | 322.0 | 8.0 |
| 588. | 321.0 | 9.1 |
| 643. | 319.0 | 10.8 |
| 698. | 321.0 | 11.8 |
| 753. | 325.0 | 10.2 |
| 808. | 325.0 | 9.4 |
| 863. | 326.0 | 9.0 |
| 918. | 326.0 | 8.0 |
| 972. | 325.0 | 7.5 |
| 1027. | 321.0 | 8.5 |
| 1082. | 317.0 | 8.2 |
| 1137. | 310.0 | 8.8 |
| 1192. | 305.0 | 8.2 |
| 1247. | 305.0 | 9.9 |
| 1302. | 302.0 | 10.5 |
| 1356. | 299.0 | 10.9 |
| 1411. | 296.0 | 10.0 |
| 1466. | 291.0 | 10.5 |
| 1521. | 289.0 | 10.6 |

RADIOSONDE DATE 18/03/77 TIME 05:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (LEG K) | OTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 866.7 | 310. | 3.6 | .000 | -3.6 | -9.4 | 2.2 | 281.2 | .000 |
| 40. | 862.3 | | | | -3.2 | -11.5 | 1.8 | 282.0 | 19.296 |
| 154. | 850.0 | 316. | 12.0 | .545 | -3.5 | -12.8 | 1.7 | 282.8 | 7.183 |
| 240. | 840.8 | | | | -3.6 | -13.7 | 1.6 | 283.5 | 8.822 |
| 305. | 833.9 | 323. | 10.8 | -.079 | -4.2 | -14.2 | 1.5 | 283.6 | .425 |
| 609. | 802.0 | 317. | 11.6 | .026 | -6.7 | -16.2 | 1.3 | 284.0 | 1.593 |
| 914. | 771.3 | 312. | 12.4 | .026 | -9.2 | -18.2 | 1.2 | 284.5 | 1.525 |
| 990. | 763.8 | | | | -9.8 | -18.7 | 1.1 | 284.7 | 1.656 |
| 1219. | 741.2 | 309. | 14.0 | .052 | -12.0 | -19.2 | 1.1 | 284.7 | .239 |
| 1523. | 712.2 | 308. | 15.0 | .033 | -14.9 | -19.8 | 1.1 | 284.8 | .225 |
| 1655. | 700.0 | 307. | 15.1 | .008 | -16.2 | -20.1 | 1.1 | 284.7 | -.239 |
| 1711. | 694.8 | | | | -16.7 | -20.2 | 1.1 | 284.8 | .935 |
| 1828. | 684.1 | 307. | 14.7 | -.023 | -17.6 | -21.1 | 1.0 | 285.1 | 2.148 |
| 1941. | 673.8 | | | | -18.5 | -22.1 | 1.0 | 285.3 | 1.935 |
| 2132. | 656.7 | 311. | 13.8 | -.030 | -19.5 | -27.0 | .6 | 286.2 | 4.813 |
| 2195. | 651.2 | | | | -19.9 | -28.7 | .5 | 286.4 | 3.515 |
| 2257. | 645.8 | | | | -18.9 | -34.7 | .3 | 288.2 | 29.627 |
| 2437. | 630.4 | 319. | 14.7 | .030 | -19.7 | -40.6 | .2 | 289.2 | 5.885 |
| 2491. | 625.8 | | | | -19.9 | -42.4 | .1 | 289.6 | 6.901 |
| 2741. | 605.0 | 326. | 18.4 | .122 | -21.2 | -46.2 | .1 | 290.9 | 5.217 |
| 2811. | 599.3 | | | | -21.6 | -47.3 | .1 | 291.2 | 4.625 |
| 3046. | 580.4 | 329. | 21.1 | .089 | -22.6 | -47.6 | .1 | 292.8 | 6.438 |
| 3201. | 568.3 | | | | -23.4 | -47.8 | .1 | 293.6 | 5.348 |
| 3350. | 556.6 | 333. | 23.1 | .066 | -24.5 | -48.5 | .1 | 294.0 | 3.022 |
| 3655. | 533.6 | 337. | 25.6 | .082 | -26.7 | -49.8 | .1 | 295.0 | 3.063 |
| 3959. | 511.6 | 338. | 26.0 | .013 | -28.9 | -51.2 | .1 | 295.9 | 2.983 |
| 4124. | 500.0 | 338. | 26.0 | .000 | -30.1 | -51.9 | .1 | 296.4 | 2.929 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 18/03/77 | 15:00:00 | DPGWV |
| FGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 5.0 | 2.2 |
| 146. | 336.0 | 2.6 |
| 204. | 325.0 | 3.5 |
| 259. | 325.0 | 3.4 |
| 314. | 334.0 | 2.0 |
| 369. | 332.0 | 3.0 |
| 424. | 320.0 | 3.1 |
| 479. | 321.0 | 3.1 |
| 533. | 305.0 | 3.8 |
| 588. | 300.0 | 4.5 |
| 643. | 318.0 | 4.8 |
| 698. | 307.0 | 5.5 |
| 753. | 298.0 | 6.0 |
| 808. | 298.0 | 5.5 |
| 863. | 295.0 | 5.2 |
| 918. | 287.0 | 5.2 |
| 972. | 281.0 | 5.5 |
| 1027. | 281.0 | 5.5 |
| 1082. | 276.0 | 5.6 |
| 1137. | 274.0 | 6.2 |
| 1192. | 275.0 | 7.0 |
| 1247. | 280.0 | 7.3 |
| 1302. | 281.0 | 8.5 |
| 1356. | 281.0 | 9.5 |
| 1411. | 284.0 | 9.5 |
| 1466. | 286.0 | 9.5 |
| 1521. | 285.0 | 11.0 |
| 1576. | 286.0 | 11.2 |
| 1631. | 288.0 | 10.6 |

RADIOSENDE DATE 21/03/77 TIME 05:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | OTHV/DZ (*1000) |
|----------|---------------|-------------------|-------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 873.1 | 180. | 2.6 | .000 | -2.7 | -13.5 | 1.5 | 281.4 | .000 |
| 67. | 865.8 | | | | .7 | -10.0 | 2.1 | 285.7 | 64.381 |
| 170. | 854.3 | | | | 2.5 | -8.8 | 2.3 | 288.7 | 28.865 |
| 216. | 850.0 | 198. | .8 | -.083 | 2.7 | -9.4 | 2.2 | 289.4 | 14.318 |
| 275. | 843.8 | | | | 2.8 | -10.2 | 2.1 | 290.1 | 11.701 |
| 305. | 840.7 | 113. | 1.3 | .056 | 2.6 | -10.4 | 2.1 | 290.2 | 3.019 |
| 609. | 809.4 | 347. | 1.6 | .010 | .3 | -11.8 | 1.9 | 290.8 | 2.280 |
| 816. | 738.8 | | | | -1.3 | -12.8 | 1.8 | 291.3 | 2.028 |
| 914. | 779.0 | 329. | 5.7 | .134 | -2.2 | -12.8 | 1.8 | 291.3 | .813 |
| 1219. | 749.4 | 328. | 9.6 | .128 | -5.0 | -12.8 | 1.9 | 291.6 | .703 |
| 1523. | 720.9 | 328. | 12.6 | .099 | -7.7 | -12.8 | 2.0 | 291.9 | .974 |
| 1689. | 705.8 | 100. | 99.9 | 5.259 | -9.2 | -12.8 | 2.0 | 292.0 | .727 |
| 1753. | 700.0 | 328. | 14.3-13.375 | | -9.7 | -12.8 | 2.0 | 292.1 | 2.164 |
| 1828. | 693.2 | 329. | 14.6 | .040 | -10.2 | -12.8 | 2.1 | 292.4 | 3.524 |
| 2013. | 676.8 | | | | -11.5 | -12.6 | 2.1 | 292.9 | 3.074 |
| 2132. | 666.4 | 335. | 14.9 | .010 | -10.1 | -14.9 | 1.8 | 295.8 | 23.641 |
| 2250. | 656.3 | | | | -8.7 | -17.1 | 1.5 | 298.6 | 23.938 |
| 2437. | 640.6 | 343. | 15.7 | .026 | -9.2 | -18.1 | 1.4 | 300.1 | 7.968 |
| 2581. | 623.8 | | | | -9.5 | -18.9 | 1.4 | 301.3 | 8.640 |
| 2741. | 615.8 | 346. | 16.9 | .039 | -10.6 | -19.9 | 1.3 | 301.8 | 3.283 |
| 3046. | 591.7 | 344. | 17.8 | .030 | -12.7 | -21.8 | 1.1 | 302.8 | 3.267 |
| 3350. | 568.6 | 340. | 18.2 | .013 | -14.8 | -23.7 | 1.0 | 303.8 | 3.204 |
| 3395. | 565.3 | | | | -15.1 | -23.9 | 1.0 | 304.0 | 3.347 |
| 3655. | 546.1 | 335. | 18.5 | .010 | -16.6 | -25.4 | .9 | 305.2 | 4.681 |
| 3959. | 524.4 | 329. | 18.9 | .013 | -18.4 | -27.2 | .8 | 306.6 | 4.520 |
| 3997. | 521.8 | | | | -18.6 | -27.4 | .8 | 306.8 | 5.082 |
| 4263. | 503.4 | 327. | 20.0 | .036 | -19.7 | -28.9 | .7 | 308.8 | 7.519 |
| 4314. | 500.0 | 327. | 19.7 | -.059 | -19.8 | -29.1 | .7 | 309.0 | 3.922 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 21/03/77 | 15:01:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 140.0 | .8 |
| 146. | 137.0 | 1.0 |
| 204. | 117.0 | 1.1 |
| 259. | 121.0 | .4 |
| 314. | 292.0 | .6 |
| 369. | 291.0 | .5 |
| 424. | 329.0 | .9 |
| 479. | 340.0 | 1.7 |
| 533. | 319.0 | 1.4 |
| 588. | 294.0 | 1.7 |
| 643. | 301.0 | 2.1 |
| 698. | 308.0 | 2.8 |
| 753. | 311.0 | 3.2 |
| 808. | 314.0 | 3.2 |
| 863. | 314.0 | 3.1 |
| 918. | 319.0 | 4.0 |
| 972. | 321.0 | 4.8 |
| 1027. | 320.0 | 7.0 |
| 1082. | 322.0 | 6.0 |
| 1137. | 323.0 | 5.1 |
| 1192. | 322.0 | 5.7 |
| 1247. | 325.0 | 6.8 |
| 1302. | 326.0 | 7.0 |
| 1356. | 321.0 | 7.0 |
| 1411. | 322.0 | 7.3 |
| 1466. | 322.0 | 8.0 |
| 1521. | 323.0 | 7.8 |
| 1576. | 325.0 | 6.9 |
| 1631. | 325.0 | 6.8 |
| 1686. | 324.0 | 7.0 |
| 1741. | 323.0 | 7.4 |
| 1796. | 324.0 | 8.1 |
| 1851. | 328.0 | 8.0 |
| 1905. | 328.0 | 8.0 |
| 1960. | 326.0 | 8.1 |
| 2015. | 326.0 | 8.0 |

RADIO SCNDE DATE 22/03/77 TIME 05:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | OTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 871.6 | 135. | 4.1 | .000 | -2.2 | -9.8 | 2.1 | 282.2 | .000 |
| 44. | 866.8 | | | | 2.7 | -6.1 | 2.8 | 287.9 | 129.135 |
| 91. | 861.8 | | | | 5.7 | -6.4 | 2.7 | 291.5 | 76.678 |
| 139. | 856.8 | | | | 8.0 | -8.4 | 2.4 | 294.3 | 58.854 |
| 205. | 850.0 | 190. | 5.8 | .083 | 8.0 | -8.9 | 2.3 | 294.9 | 9.975 |
| 295. | 840.8 | | | | 7.9 | -9.5 | 2.2 | 295.7 | 8.882 |
| 305. | 839.8 | 173. | 5.6 | -.020 | 7.8 | -9.6 | 2.2 | 295.7 | -.726 |
| 609. | 809.2 | 184. | 5.3 | -.010 | 6.0 | -11.1 | 2.0 | 297.0 | 3.980 |
| 613. | 808.8 | | | | 6.0 | -11.1 | 2.0 | 297.0 | 10.543 |
| 914. | 779.4 | 193. | 4.4 | -.030 | 3.8 | -12.0 | 1.9 | 297.8 | 2.603 |
| 1219. | 750.7 | 217. | 3.3 | -.036 | 1.6 | -12.9 | 1.9 | 298.6 | 2.653 |
| 1244. | 748.3 | | | | 1.4 | -13.0 | 1.9 | 298.6 | 2.174 |
| 1523. | 722.7 | 253. | 2.8 | -.016 | -8 | -13.7 | 1.8 | 299.2 | 2.020 |
| 1544. | 720.8 | | | | -9 | -13.7 | 1.8 | 299.3 | 5.538 |
| 1777. | 700.0 | 276. | 3.3 | .020 | -3.0 | -16.6 | 1.5 | 299.4 | .537 |
| 1828. | 695.5 | 281. | 3.6 | .059 | -3.4 | -17.2 | 1.4 | 299.5 | 1.901 |
| 1979. | 682.3 | | | | -4.7 | -19.1 | 1.2 | 299.7 | 1.059 |
| 2132. | 669.1 | 295. | 5.3 | .056 | -5.4 | -22.8 | .9 | 300.5 | 5.452 |
| 2437. | 643.5 | 298. | 6.6 | .043 | -6.9 | -30.0 | .5 | 302.1 | 5.219 |
| 2741. | 618.9 | 299. | 8.0 | .046 | -8.3 | -35.5 | .3 | 303.9 | 5.740 |
| 2749. | 618.3 | | | | -8.4 | -37.7 | .2 | 303.8 | -5.170 |
| 3046. | 595.0 | 300. | 10.1 | .069 | -10.5 | -28.4 | .6 | 304.8 | 3.332 |
| 3074. | 592.8 | | | | -10.7 | -27.5 | .7 | 304.9 | 3.614 |
| 3298. | 575.8 | | | | -11.7 | -30.5 | .5 | 306.3 | 6.020 |
| 3350. | 571.8 | 300. | 11.3 | .039 | -12.1 | -30.4 | .5 | 306.4 | 2.757 |
| 3655. | 549.3 | 295. | 11.9 | .020 | -14.6 | -30.1 | .6 | 307.0 | 1.892 |
| 3873. | 533.8 | | | | -16.4 | -29.9 | .6 | 307.4 | 1.715 |
| 3959. | 527.6 | 295. | 12.4 | .016 | -17.0 | -30.7 | .6 | 307.7 | 3.501 |
| 4263. | 506.5 | 300. | 12.7 | .010 | -19.3 | -33.7 | .4 | 308.5 | 2.613 |
| 4360. | 500.0 | 299. | 12.9 | .021 | -20.1 | -34.7 | .4 | 308.6 | 1.641 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 22/03/77 | 15:00:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 132.0 | 2.1 |
| 146. | 141.0 | 4.3 |
| 204. | 145.0 | 6.7 |
| 259. | 144.0 | 7.4 |
| 314. | 141.0 | 8.2 |
| 369. | 139.0 | 7.6 |
| 424. | 138.0 | 6.6 |
| 479. | 144.0 | 8.0 |
| 533. | 149.0 | 8.8 |
| 588. | 151.0 | 5.8 |
| 643. | 155.0 | 4.9 |
| 698. | 152.0 | 5.2 |
| 753. | 141.0 | 6.1 |
| 808. | 135.0 | 7.8 |
| 863. | 135.0 | 9.2 |
| 918. | 141.0 | 11.2 |
| 972. | 141.0 | 10.0 |
| 1027. | 157.0 | 3.5 |
| 1082. | 334.0 | .2 |
| 1137. | 33.0 | .8 |
| 1192. | 309.0 | .5 |
| 1247. | 160.0 | 2.0 |
| 1302. | 156.0 | 4.3 |
| 1356. | 150.0 | 5.0 |

RADIOSONDE DATE 23/03/77 TIME 05:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV# (DEG K) | DTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 862.4 | 150. | 5.7 | .000 | -1.1 | -11.8 | 1.8 | 284.1 | .000 |
| 60. | 856.0 | | | | 6.7 | -7.5 | 2.5 | 293.0 | 148.380 |
| 118. | 850.0 | 170. | 8.0 | .195 | 8.6 | -8.4 | 2.4 | 295.6 | 44.062 |
| 167. | 845.0 | | | | 10.1 | -9.0 | 2.3 | 297.7 | 42.000 |
| 305. | 831.1 | 159. | 8.2 | .011 | 10.1 | -9.6 | 2.2 | 299.1 | 10.165 |
| 414. | 820.3 | | | | 10.2 | -10.0 | 2.2 | 300.3 | 11.186 |
| 603. | 801.8 | | | | 9.4 | -11.0 | 2.1 | 301.4 | 5.767 |
| 609. | 801.2 | 175. | 7.4 | -.026 | 9.4 | -11.0 | 2.1 | 301.4 | 10.802 |
| 914. | 772.0 | 192. | 8.0 | .020 | 7.6 | -12.6 | 1.9 | 302.7 | 4.077 |
| 1219. | 743.9 | 203. | 9.2 | .039 | 5.8 | -14.2 | 1.7 | 303.9 | 4.047 |
| 1347. | 732.4 | | | | 5.0 | -14.9 | 1.6 | 304.4 | 3.661 |
| 1523. | 716.4 | 205. | 10.0 | .026 | 3.4 | -15.4 | 1.6 | 304.5 | .916 |
| 1709. | 700.0 | 203. | 10.2 | .011 | 1.8 | -15.8 | 1.6 | 304.8 | 1.329 |
| 1828. | 689.7 | 201. | 10.3 | .008 | .7 | -16.1 | 1.6 | 304.9 | .566 |
| 2132. | 663.9 | 195. | 10.5 | .007 | -2.0 | -16.9 | 1.5 | 305.1 | .971 |
| 2437. | 639.1 | 195. | 10.8 | .010 | -4.8 | -17.6 | 1.5 | 305.3 | .489 |
| 2541. | 630.8 | | | | -5.7 | -17.9 | 1.5 | 305.4 | 1.081 |
| 2741. | 614.7 | 198. | 10.7 | -.003 | -7.5 | -19.1 | 1.4 | 305.6 | .878 |
| 3046. | 591.0 | 201. | 10.2 | -.016 | -10.2 | -21.0 | 1.2 | 305.9 | .933 |
| 3268. | 574.3 | | | | -12.2 | -22.4 | 1.1 | 306.0 | .684 |
| 3350. | 568.1 | 203. | 9.6 | -.020 | -12.9 | -23.6 | 1.0 | 306.1 | 1.333 |
| 3655. | 545.8 | 205. | 9.5 | -.003 | -15.5 | -28.0 | .7 | 306.5 | 1.233 |
| 3794. | 535.8 | | | | -16.7 | -30.0 | .6 | 306.7 | 1.223 |
| 3959. | 524.1 | 211. | 10.3 | .026 | -18.1 | -31.6 | .5 | 306.9 | 1.481 |
| 4263. | 503.1 | 214. | 11.4 | .036 | -20.5 | -34.5 | .4 | 307.6 | 2.197 |
| 4309. | 500.0 | 215. | 11.5 | .022 | -20.9 | -35.0 | .4 | 307.6 | 1.156 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| | | |
|----------|----------|------------|
| DATE | TIME | PLACE |
| 23/03/77 | 15:11:00 | DPGWV |
| ----- | | |
| HGT. | WIND DIR | WIND SPEED |
| (M) | (DEG) | (M/S) |
| ----- | | |
| 76. | 196.0 | 9.5 |
| 146. | 200.0 | 4.8 |
| 204. | 198.0 | 7.0 |
| 259. | 198.0 | 12.0 |
| 314. | 199.0 | 14.0 |
| 369. | 199.0 | 16.2 |
| 424. | 200.0 | 18.5 |
| 479. | 200.0 | 20.0 |
| 533. | 200.0 | 20.0 |
| 588. | 200.0 | 19.8 |
| 643. | 201.0 | 17.0 |
| 698. | 201.0 | 14.0 |
| 753. | 202.0 | 11.9 |
| 808. | 203.0 | 14.0 |
| 863. | 202.0 | 18.9 |
| 918. | 201.0 | 16.8 |
| 972. | 209.0 | 11.0 |
| 1027. | 223.0 | 8.0 |

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 24/03/77 | 15:11:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 2.0 | 5.2 |
| 146. | 355.0 | 5.0 |
| 204. | 353.0 | 3.9 |
| 259. | 354.0 | 3.6 |
| 314. | 354.0 | 3.5 |
| 369. | 355.0 | 2.5 |
| 424. | 358.0 | 2.3 |
| 479. | 10.0 | 3.5 |
| 533. | 21.0 | 3.9 |
| 588. | 22.0 | 3.9 |
| 643. | 20.0 | 4.2 |
| 698. | 22.0 | 4.0 |
| 753. | 22.0 | 3.6 |

RADIO SCNDE DATE 25/03/77 TIME 06:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (#10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTHV/DZ (#1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 855.9 | 335. | 5.1 | .000 | 1.1 | -3.4 | 3.5 | 287.3 | .000 |
| 55. | 850.0 | 325. | 13.3 | 1.491 | .8 | -4.0 | 3.3 | 287.6 | 4.204 |
| 210. | 833.8 | | | | .1 | -5.8 | 3.0 | 288.4 | 5.051 |
| 305. | 823.9 | 338. | 12.7 | -.024 | -1.0 | -5.9 | 3.0 | 288.2 | -1.850 |
| 609. | 792.9 | 344. | 13.9 | .039 | -3.8 | -6.2 | 3.0 | 288.4 | .622 |
| 797. | 774.3 | | | | -5.5 | -6.3 | 3.1 | 288.5 | .748 |
| 914. | 762.8 | 352. | 14.3 | .013 | -6.2 | -6.7 | 3.0 | 289.0 | 4.026 |
| 1086. | 746.3 | | | | -7.2 | -7.3 | 3.0 | 289.7 | 4.132 |
| 1219. | 733.7 | 358. | 13.6 | -.023 | -7.9 | -8.4 | 2.8 | 290.3 | 4.611 |
| 1276. | 728.3 | | | | -8.2 | -8.8 | 2.7 | 290.6 | 4.796 |
| 1523. | 705.5 | 2. | 12.1 | -.049 | -8.4 | -9.5 | 2.6 | 293.0 | 9.809 |
| 1569. | 701.3 | | | | -8.4 | -9.6 | 2.6 | 293.5 | 10.867 |
| 1583. | 700.0 | 2. | 11.9 | -.033 | -8.5 | -9.7 | 2.6 | 293.5 | 3.002 |
| 1828. | 678.0 | 359. | 11.2 | -.029 | -10.2 | -11.3 | 2.4 | 294.3 | 3.051 |
| 2132. | 651.6 | 357. | 10.9 | -.010 | -12.4 | -13.2 | 2.1 | 295.1 | 2.716 |
| 2437. | 626.2 | | | | -14.5 | -15.2 | 1.9 | 296.0 | 3.037 |
| 2615. | 611.8 | | | | -15.8 | -16.3 | 1.7 | 296.5 | 2.562 |
| 2741. | 601.5 | 351. | 6.3 | -.076 | -16.6 | -17.2 | 1.6 | 297.0 | 3.961 |
| 3046. | 577.5 | 314. | 4.1 | -.072 | -18.4 | -19.2 | 1.4 | 298.3 | 4.375 |
| 3339. | 555.3 | | | | -20.2 | -21.2 | 1.3 | 299.5 | 4.091 |
| 3350. | 554.5 | 282. | 4.4 | .009 | -20.3 | -21.3 | 1.3 | 299.5 | .308 |
| 3645. | 532.8 | | | | -21.8 | -24.5 | 1.0 | 301.1 | 5.397 |
| 3655. | 532.1 | 247. | 4.2 | -.006 | -21.9 | -24.6 | 1.0 | 301.1 | -.798 |
| 3959. | 510.4 | 222. | 4.9 | .023 | -24.5 | -26.6 | .8 | 301.6 | 1.416 |
| 4109. | 500.0 | 218. | 5.2 | .020 | -25.7 | -27.5 | .8 | 301.9 | 2.049 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 25/03/77 | 14:56:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 313.0 | .5 |
| 146. | 324.0 | .4 |
| 204. | 13.0 | .4 |
| 259. | 345.0 | .8 |
| 314. | 25.0 | .1 |
| 369. | 69.0 | .6 |
| 424. | 45.0 | .7 |
| 479. | 23.0 | .6 |
| 533. | 17.0 | .6 |
| 588. | 10.0 | 1.3 |
| 643. | 17.0 | 1.9 |
| 698. | 9.0 | 1.4 |
| 753. | 8.0 | 2.4 |
| 808. | 4.0 | 3.7 |
| 863. | 360.0 | 3.8 |
| 918. | 360.0 | 4.0 |
| 972. | 359.0 | 4.1 |
| 1027. | 355.0 | 3.5 |
| 1082. | 354.0 | 3.2 |
| 1137. | 354.0 | 3.8 |
| 1192. | 2.0 | 3.9 |
| 1247. | 3.0 | 4.2 |
| 1302. | 2.0 | 4.8 |
| 1356. | 2.0 | 5.0 |
| 1411. | 1.0 | 5.2 |
| 1466. | 357.0 | 5.3 |
| 1521. | 354.0 | 5.2 |
| 1576. | 348.0 | 4.8 |
| 1631. | 348.0 | 3.9 |
| 1686. | 343.0 | 3.5 |
| 1741. | 330.0 | 3.5 |
| 1796. | 317.0 | 3.3 |
| 1851. | 313.0 | 3.5 |
| 1905. | 307.0 | 3.6 |
| 1960. | 289.0 | 3.2 |
| 2015. | 277.0 | 3.0 |

RADIOSONDE DATE 28/03/77 TIME 05:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 862.8 | 270. | 1.5 | .000 | -3.5 | -12.9 | 1.6 | 281.6 | .000 |
| 9. | 861.8 | | | | -3.0 | -13.4 | 1.6 | 282.2 | 67.189 |
| 102. | 851.8 | | | | -2.6 | -13.3 | 1.6 | 283.5 | 14.711 |
| 118. | 850.0 | 302. | 13.3 | 1.000 | -2.8 | -13.4 | 1.6 | 283.5 | -2.488 |
| 305. | 830.2 | 309. | 11.8 | -.080 | -4.2 | -14.4 | 1.5 | 283.9 | 2.266 |
| 313. | 829.3 | | | | -4.2 | -14.4 | 1.5 | 284.0 | 11.046 |
| 609. | 798.2 | 314. | 12.6 | .026 | -7.0 | -15.5 | 1.4 | 284.1 | .402 |
| 914. | 767.5 | 322. | 12.5 | -.003 | -9.8 | -16.6 | 1.4 | 284.3 | .556 |
| 1219. | 737.9 | 330. | 12.8 | .010 | -12.6 | -17.8 | 1.3 | 284.4 | .475 |
| 1288. | 731.3 | | | | -13.2 | -18.0 | 1.3 | 284.5 | 1.064 |
| 1523. | 709.0 | 336. | 13.7 | .030 | -15.4 | -18.6 | 1.2 | 284.6 | .415 |
| 1579. | 703.8 | | | | -15.9 | -18.7 | 1.2 | 284.7 | .827 |
| 1619. | 700.0 | 338. | 14.1 | .042 | -16.2 | -18.9 | 1.2 | 284.8 | 2.653 |
| 1828. | 680.0 | 341. | 14.9 | .038 | -18.0 | -19.6 | 1.2 | 285.1 | 1.688 |
| 1989. | 666.3 | | | | -19.4 | -20.1 | 1.2 | 285.2 | .536 |
| 2132. | 653.5 | 342. | 15.5 | .020 | -20.1 | -23.8 | .8 | 285.9 | 5.190 |
| 2181. | 649.3 | | | | -20.3 | -25.0 | .8 | 286.2 | 5.857 |
| 2437. | 627.1 | 339. | 15.2 | -.010 | -22.1 | -29.4 | .5 | 287.0 | 2.978 |
| 2500. | 621.8 | | | | -22.5 | -30.4 | .5 | 287.2 | 3.674 |
| 2741. | 601.5 | 338. | 15.3 | .003 | -24.6 | -33.8 | .4 | 287.5 | 1.197 |
| 3046. | 576.8 | 337. | 99.9 | 2.774 | -27.7 | -38.7 | .2 | 287.3 | -.601 |
| 3096. | 572.8 | | | | -27.7 | -38.7 | .2 | 287.9 | 11.454 |
| 3350. | 552.8 | 338. | 16.3 | -2.750 | -30.1 | -38.4 | .2 | 288.0 | .395 |
| 3422. | 547.3 | | | | -30.7 | -38.3 | .3 | 288.1 | 1.565 |
| 3655. | 529.4 | 339. | 16.7 | .013 | -32.7 | -40.8 | .2 | 288.5 | 1.480 |
| 3959. | 506.9 | 339. | 17.5 | .026 | -35.4 | -44.0 | .1 | 288.8 | 1.042 |
| 4055. | 500.0 | 339. | 17.5 | .000 | -36.2 | -45.0 | .1 | 288.9 | 1.628 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

DATE 28/03/77 TIME 15:07:00 PLACE DPGWV

| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
|-------------|-------------------|---------------------|
| 76. | 309.0 | 6.8 |
| 146. | 306.0 | 9.2 |
| 204. | 293.0 | 8.8 |
| 259. | 293.0 | 8.5 |
| 314. | 299.0 | 6.9 |
| 369. | 296.0 | 4.8 |
| 424. | 295.0 | 2.7 |
| 479. | 297.0 | 2.8 |
| 533. | 304.0 | 5.0 |
| 588. | 306.0 | 8.0 |
| 643. | 306.0 | 9.0 |
| 698. | 308.0 | 9.5 |
| 753. | 309.0 | 9.0 |
| 808. | 314.0 | 8.5 |
| 863. | 316.0 | 9.0 |
| 918. | 317.0 | 8.9 |
| 972. | 321.0 | 7.5 |
| 1027. | 320.0 | 7.5 |
| 1082. | 317.0 | 7.9 |
| 1137. | 317.0 | 6.0 |
| 1192. | 318.0 | 5.0 |
| 1247. | 319.0 | 6.0 |
| 1302. | 323.0 | 7.5 |
| 1356. | 323.0 | 6.9 |
| 1411. | 323.0 | 5.8 |
| 1466. | 324.0 | 5.0 |
| 1521. | 325.0 | 4.8 |
| 1576. | 322.0 | 5.3 |
| 1631. | 318.0 | 8.0 |
| 1686. | 317.0 | 8.0 |
| 1741. | 315.0 | 7.5 |
| 1796. | 315.0 | 7.0 |
| 1851. | 315.0 | 7.5 |
| 1905. | 315.0 | 7.7 |
| 1960. | 313.0 | 7.8 |
| 2015. | 313.0 | 7.0 |

| RADIOSONDE DATE 29/03/77 TIME 05:00:00 LOCATION DPGWV | | | | | | | | | |
|---|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | OTHV/DZ (*1000) |
| 0. | 860.9 | 280. | 2.6 | .000 | -3.0 | -11.0 | 1.9 | 282.3 | .000 |
| 98. | 850.3 | | | | -3.3 | -12.4 | 1.7 | 283.0 | 6.693 |
| 101. | 850.0 | 296. | 11.0 | .832 | -3.4 | -12.4 | 1.7 | 282.9 | -25.398 |
| 196. | 839.8 | | | | -3.5 | -12.2 | 1.8 | 283.8 | 9.282 |
| 305. | 828.2 | 304. | 9.1 | -.093 | -4.5 | -12.7 | 1.7 | 283.8 | .610 |
| 609. | 796.6 | 311. | 8.9 | -.007 | -7.3 | -13.9 | 1.6 | 284.0 | .550 |
| 816. | 775.8 | | | | -9.2 | -14.8 | 1.6 | 284.1 | .478 |
| 914. | 766.0 | 317. | 7.7 | -.039 | -10.1 | -15.1 | 1.5 | 284.2 | .606 |
| 1219. | 736.0 | 320. | 6.5 | -.039 | -12.8 | -16.2 | 1.5 | 284.5 | .990 |
| 1518. | 707.8 | | | | -15.5 | -17.2 | 1.4 | 284.7 | .676 |
| 1523. | 707.3 | 319. | 5.9 | -.020 | -15.5 | -17.3 | 1.4 | 284.7 | 11.134 |
| 1600. | 700.0 | 319. | 6.0 | .013 | -16.2 | -17.9 | 1.3 | 284.8 | .788 |
| 1828. | 678.8 | 319. | 6.2 | .009 | -18.0 | -19.8 | 1.2 | 285.3 | 2.082 |
| 2132. | 651.6 | 319. | 6.9 | .023 | -20.5 | -22.3 | 1.0 | 285.8 | 1.629 |
| 2437. | 625.4 | 319. | 7.6 | .023 | -23.0 | -24.9 | .8 | 286.2 | 1.584 |
| 2576. | 613.8 | | | | -24.1 | -26.0 | .7 | 286.5 | 1.873 |
| 2741. | 599.9 | 318. | 7.9 | .010 | -25.6 | -27.1 | .7 | 286.6 | .827 |
| 2988. | 579.8 | | | | -27.8 | -28.8 | .6 | 286.9 | .895 |
| 3046. | 575.2 | 317. | 8.1 | .007 | -28.0 | -30.2 | .5 | 287.3 | 7.025 |
| 3196. | 563.3 | | | | -28.5 | -34.0 | .4 | 288.4 | 7.371 |
| 3350. | 551.1 | 318. | 9.4 | .043 | -30.0 | -35.6 | .3 | 288.4 | .155 |
| 3655. | 527.9 | 321. | 11.8 | .079 | -32.9 | -39.0 | .2 | 288.5 | .237 |
| 3860. | 512.8 | | | | -34.9 | -41.2 | .2 | 288.4 | -.121 |
| 3959. | 505.5 | 322. | 12.5 | .023 | -36.0 | -42.2 | .2 | 298.3 | -1.566 |
| 4035. | 500.0 | 322. | 13.1 | .079 | -36.8 | -43.0 | .2 | 288.2 | -.979 |

* VIRTUAL POTENTIAL TEMPERATURE

AD-A049 036

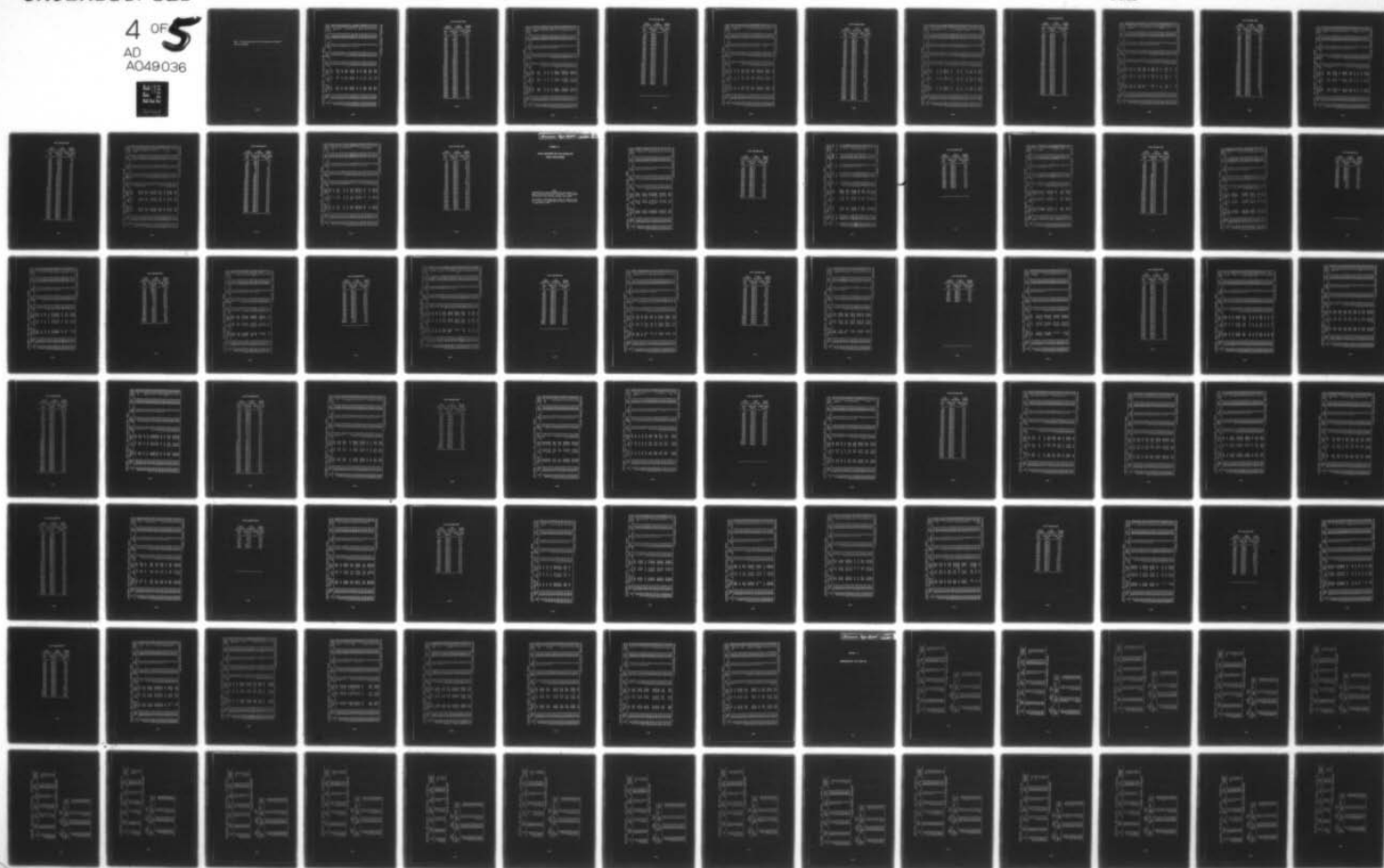
ARMY DUGWAY PROVING GROUND UTAH
TURBULENCE MEASUREMENTS ON A FORTY-EIGHT METER TOWER IN DESERT --ETC(U)
OCT 77 A W WALDRON

F/G 4/2

UNCLASSIFIED

NL

4 OF 5
AD
A049036



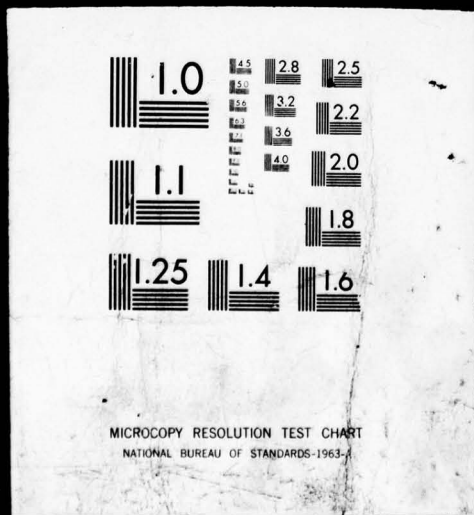
4

OF

5

AD

A049036



Note: Pilot Balloon Data for the afternoon of 29/03/77
was not obtained.

RADIOSONDE DATE 30/03/77 TIME 05:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 867.3 | 265. | 1.5 | .000 | -3.5 | -7.4 | 2.5 | 281.3 | .000 |
| 14. | 865.8 | | | | -3.4 | -9.3 | 2.2 | 281.5 | 13.172 |
| 106. | 855.8 | | | | -3.8 | -6.8 | 2.7 | 282.1 | 6.567 |
| 159. | 850.0 | 258. | 2.3 | .050 | -3.9 | -6.8 | 2.7 | 282.5 | 8.441 |
| 305. | 834.5 | 232. | .5 | -.123 | -4.4 | -6.8 | 2.7 | 283.5 | 6.660 |
| 416. | 822.8 | | | | -4.7 | -6.8 | 2.8 | 284.3 | 7.534 |
| 609. | 802.7 | 270. | 1.6 | .036 | -6.4 | -7.6 | 2.7 | 284.5 | .971 |
| 816. | 781.8 | | | | -8.2 | -8.6 | 2.5 | 284.7 | .952 |
| 914. | 771.9 | 273. | 2.0 | .013 | -8.9 | -9.4 | 2.4 | 285.0 | 2.683 |
| 1219. | 741.9 | 264. | 2.5 | .016 | -11.1 | -12.1 | 2.0 | 285.8 | 2.562 |
| 1505. | 714.8 | | | | -13.1 | -14.6 | 1.7 | 286.6 | 2.792 |
| 1523. | 713.1 | 249. | 2.8 | .010 | -13.2 | -14.8 | 1.7 | 286.8 | 9.444 |
| 1664. | 700.0 | 233. | 2.7 | -.007 | -14.2 | -16.6 | 1.5 | 287.0 | 1.631 |
| 1828. | 685.0 | 233. | 3.5 | .049 | -15.4 | -18.5 | 1.3 | 287.4 | 2.509 |
| 1930. | 675.8 | | | | -16.1 | -19.8 | 1.2 | 287.8 | 3.028 |
| 2132. | 657.9 | 247. | 5.5 | .066 | -17.9 | -21.8 | 1.0 | 287.9 | .787 |
| 2133. | 657.8 | | | | -17.9 | -21.8 | 1.0 | 287.9 | 12.547 |
| 2437. | 631.5 | 249. | 7.6 | .069 | -19.9 | -25.9 | .7 | 289.0 | 3.446 |
| 2660. | 612.8 | | | | -21.3 | -28.9 | .6 | 289.8 | 3.836 |
| 2741. | 606.0 | 255. | 8.2 | .020 | -22.0 | -29.5 | .5 | 289.9 | 1.406 |
| 3046. | 581.3 | 265. | 7.5 | -.023 | -24.2 | -31.8 | .5 | 290.8 | 2.903 |
| 3282. | 562.8 | | | | -26.1 | -33.5 | .4 | 291.3 | 1.917 |
| 3350. | 557.5 | 262. | 5.8 | -.056 | -26.6 | -34.0 | .4 | 291.5 | 2.874 |
| 3655. | 534.4 | 258. | 4.6 | -.039 | -28.8 | -36.1 | .3 | 292.4 | 2.971 |
| 3723. | 529.3 | | | | -29.3 | -36.6 | .3 | 292.6 | 2.952 |
| 3959. | 512.0 | 258. | 5.0 | .013 | -30.7 | -37.4 | .3 | 293.7 | 4.642 |
| 4128. | 500.0 | 259. | 5.4 | .024 | -31.9 | -38.4 | .3 | 294.2 | 3.144 |
| | | | .0 | | | | | | |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 30/03/77 | 13:00:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 19.0 | 1.6 |
| 146. | 3.0 | 2.1 |
| 204. | 360.0 | 1.7 |
| 259. | 49.0 | 1.8 |
| 314. | 62.0 | 1.8 |
| 369. | 34.0 | .8 |
| 424. | 43.0 | 1.4 |
| 479. | 42.0 | 1.6 |
| 533. | 33.0 | 1.1 |
| 588. | 49.0 | 2.0 |
| 643. | 69.0 | 2.3 |
| 698. | 103.0 | 1.1 |
| 753. | 97.0 | 1.3 |
| 808. | 104.0 | 2.4 |
| 863. | 100.0 | 3.2 |
| 918. | 128.0 | 2.1 |
| 972. | 156.0 | 3.0 |
| 1027. | 129.0 | 4.0 |
| 1082. | 127.0 | 4.0 |
| 1137. | 125.0 | 4.3 |
| 1192. | 136.0 | 6.2 |
| 1247. | 134.0 | 8.0 |
| 1302. | 131.0 | 8.2 |
| 1356. | 136.0 | 7.9 |
| 1411. | 148.0 | 8.0 |
| 1466. | 160.0 | 8.9 |
| 1521. | 159.0 | 8.7 |
| 1576. | 158.0 | 8.5 |
| 1631. | 162.0 | 8.9 |
| 1686. | 162.0 | 8.8 |
| 1741. | 159.0 | 8.8 |
| 1796. | 156.0 | 8.5 |
| 1851. | 156.0 | 9.3 |
| 1905. | 158.0 | 9.0 |
| 1960. | 162.0 | 8.5 |
| 2015. | 163.0 | 9.0 |

| RADIO SCNDE DATE 31/03/77 TIME 05:00:00 LOCATION DPGWV | | | | | | | | | |
|--|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTHV/DZ (*1000) |
| 0. | 865.6 | 235. | 3.6 | .000 | -6 | -8.0 | 2.4 | 284.5 | .000 |
| 35. | 861.3 | | | | .3 | -6.6 | 2.7 | 285.8 | 38.544 |
| 129. | 851.8 | | | | .8 | -6.0 | 2.9 | 287.3 | 16.045 |
| 146. | 850.0 | 250. | 6.6 | .205 | .7 | -6.0 | 2.9 | 287.4 | 4.118 |
| 305. | 833.3 | 235. | 4.8 | -.113 | -.6 | -6.6 | 2.8 | 287.6 | 1.576 |
| 339. | 829.8 | | | | -.9 | -6.7 | 2.8 | 287.7 | .817 |
| 528. | 810.3 | | | | -1.9 | -7.2 | 2.7 | 288.6 | 4.720 |
| 609. | 802.0 | 221. | 6.1 | .043 | -2.5 | -7.3 | 2.8 | 288.8 | 2.618 |
| 780. | 785.0 | | | | -3.8 | -7.7 | 2.7 | 289.1 | 2.191 |
| 914. | 771.7 | 205. | 6.5 | .013 | -4.9 | -8.3 | 2.6 | 289.4 | 1.611 |
| 1135. | 750.3 | | | | -6.8 | -9.3 | 2.5 | 289.6 | 1.121 |
| 1219. | 742.3 | 203. | 6.4 | -.003 | -7.4 | -10.8 | 2.3 | 289.8 | 2.252 |
| 1426. | 722.8 | | | | -8.9 | -14.2 | 1.8 | 290.3 | 2.311 |
| 1523. | 713.6 | 204. | 7.1 | .023 | -9.7 | -15.7 | 1.6 | 290.4 | 1.552 |
| 1671. | 700.0 | 205. | 7.7 | .041 | -11.1 | -17.8 | 1.3 | 290.4 | .069 |
| 1828. | 685.9 | 207. | 8.4 | .045 | -12.4 | -20.1 | 1.1 | 290.6 | 1.321 |
| 2044. | 666.8 | | | | -14.4 | -23.3 | .9 | 290.7 | .301 |
| 2132. | 658.9 | 210. | 9.9 | .049 | -15.0 | -24.4 | .8 | 291.0 | 3.447 |
| 2437. | 632.6 | 213. | 11.0 | .036 | -17.3 | -28.1 | .6 | 291.8 | 2.460 |
| 2741. | 607.3 | 213. | 11.2 | .007 | -19.6 | -31.7 | .4 | 292.5 | 2.450 |
| 3046. | 583.0 | 213. | 10.8 | -.013 | -21.9 | -35.4 | .3 | 293.2 | 2.394 |
| 3171. | 573.3 | | | | -22.8 | -36.9 | .3 | 293.6 | 2.783 |
| 3350. | 559.2 | 213. | 11.5 | .023 | -24.1 | -38.1 | .2 | 294.1 | 3.120 |
| 3655. | 536.1 | 216. | 11.1 | -.013 | -26.3 | -40.0 | .2 | 295.1 | 3.063 |
| 3959. | 514.0 | 221. | 12.9 | .059 | -28.5 | -41.8 | .2 | 296.0 | 2.984 |
| 4158. | 500.0 | 221. | 13.1 | .010 | -30.0 | -43.1 | .2 | 296.5 | 2.585 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|----------|----------|-------|
| 31/03/77 | 12:40:00 | DPGWV |

| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
|-------------|-------------------|---------------------|
| 76. | 251.0 | 1.5 |
| 146. | 253.0 | 1.2 |
| 204. | 253.0 | 1.3 |
| 259. | 249.0 | 1.8 |
| 314. | 250.0 | 2.5 |
| 369. | 250.0 | 3.0 |
| 424. | 248.0 | 2.8 |
| 479. | 257.0 | 2.8 |
| 533. | 268.0 | 3.0 |
| 588. | 267.0 | 3.3 |
| 643. | 265.0 | 3.8 |
| 698. | 263.0 | 4.2 |
| 753. | 259.0 | 5.0 |
| 808. | 249.0 | 4.2 |
| 863. | 242.0 | 3.5 |
| 918. | 240.0 | 3.8 |
| 972. | 237.0 | 3.2 |
| 1027. | 227.0 | 2.8 |
| 1082. | 228.0 | 3.0 |
| 1137. | 233.0 | 3.0 |
| 1192. | 234.0 | 3.0 |
| 1247. | 234.0 | 2.9 |
| 1302. | 236.0 | 2.9 |
| 1356. | 239.0 | 3.2 |
| 1411. | 239.0 | 3.5 |
| 1466. | 237.0 | 3.5 |
| 1521. | 237.0 | 4.0 |
| 1576. | 238.0 | 4.4 |
| 1631. | 238.0 | 5.0 |
| 1686. | 238.0 | 5.6 |

RADIO SCND E DATE 01/04/77 TIME 05:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | OTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 856.5 | 310. | 7.7 | .000 | 1.7 | -2.4 | 3.7 | 288.0 | .000 |
| 52. | 851.0 | | | | .9 | -2.7 | 3.7 | 287.6 | -6.135 |
| 61. | 850.0 | 284. | 11.9 | .689 | .9 | -2.8 | 3.7 | 287.7 | 10.299 |
| 158. | 839.8 | | | | .9 | -3.4 | 3.5 | 288.7 | 10.045 |
| 305. | 824.6 | 281. | 7.9 | -.164 | .2 | -5.0 | 3.2 | 289.4 | 4.829 |
| 455. | 809.3 | | | | -.5 | -6.6 | 2.9 | 290.2 | 5.024 |
| 609. | 793.7 | 252. | 5.7 | -.072 | -1.9 | -7.2 | 2.8 | 290.3 | .702 |
| 914. | 763.7 | 231. | 6.4 | .023 | -4.8 | -8.4 | 2.7 | 290.3 | .171 |
| 1144. | 741.8 | | | | -6.9 | -9.3 | 2.5 | 290.5 | .504 |
| 1219. | 734.7 | 232. | 6.6 | .007 | -7.5 | -9.5 | 2.5 | 290.6 | 1.879 |
| 1523. | 706.4 | 250. | 5.7 | -.030 | -9.8 | -10.4 | 2.4 | 291.3 | 2.383 |
| 1579. | 701.3 | | | | -10.3 | -10.6 | 2.4 | 291.4 | .827 |
| 1593. | 700.0 | 255. | 5.8 | .014 | -10.4 | -10.7 | 2.4 | 291.4 | 2.937 |
| 1828. | 678.9 | 270. | 6.8 | .043 | -11.7 | -12.0 | 2.2 | 292.5 | 4.583 |
| 2088. | 656.3 | | | | -13.2 | -13.5 | 2.0 | 293.6 | 4.299 |
| 2122. | 652.4 | 280. | 7.4 | .020 | -13.5 | -13.8 | 2.0 | 293.8 | 3.516 |
| 2437. | 626.5 | 300. | 7.8 | .013 | -15.5 | -16.1 | 1.7 | 294.8 | 3.553 |
| 2741. | 601.6 | 310. | 8.6 | .026 | -17.5 | -18.3 | 1.5 | 295.9 | 3.560 |
| 3046. | 577.7 | 312. | 8.0 | -.020 | -19.6 | -20.6 | 1.3 | 296.9 | 3.122 |
| 3174. | 568.0 | | | | -20.4 | -21.5 | 1.2 | 297.4 | 3.798 |
| 3350. | 554.4 | 312. | 7.7 | -.010 | -21.8 | -23.1 | 1.1 | 297.7 | 2.191 |
| 3655. | 531.8 | 306. | 8.5 | .026 | -24.2 | -25.7 | .9 | 298.4 | 2.145 |
| 3959. | 510.1 | 297. | 8.8 | .010 | -26.6 | -28.3 | .7 | 299.0 | 2.094 |
| 4071. | 502.3 | | | | -27.4 | -29.3 | .7 | 299.4 | 3.002 |
| 4104. | 500.0 | 297. | 8.1 | -.048 | -27.7 | -29.6 | .6 | 299.4 | .740 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 01/04/77 | 14:50:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 283.0 | 18.3 |
| 146. | 282.0 | 13.0 |
| 204. | 288.0 | 9.2 |
| 259. | 293.0 | 8.0 |
| 314. | 293.0 | 9.0 |
| 369. | 293.0 | 12.0 |
| 424. | 296.0 | 11.2 |
| 479. | 302.0 | 10.2 |
| 533. | 302.0 | 10.0 |
| 588. | 305.0 | 8.8 |
| 643. | 312.0 | 8.0 |
| 698. | 317.0 | 8.0 |
| 753. | 320.0 | 8.3 |
| 808. | 324.0 | 9.4 |
| 863. | 322.0 | 9.0 |
| 918. | 322.0 | 9.0 |
| 972. | 327.0 | 10.0 |
| 1027. | 329.0 | 9.5 |
| 1082. | 331.0 | 10.0 |
| 1137. | 331.0 | 10.0 |
| 1192. | 332.0 | 8.9 |
| 1247. | 325.0 | 12.0 |
| 1302. | 325.0 | 13.0 |
| 1356. | 338.0 | 7.9 |
| 1411. | 339.0 | 7.0 |
| 1466. | 331.0 | 9.5 |
| 1521. | 331.0 | 10.5 |
| 1576. | 331.0 | 11.0 |
| 1631. | 334.0 | 8.5 |
| 1686. | 338.0 | 7.0 |
| 1741. | 337.0 | 8.2 |
| 1796. | 337.0 | 8.0 |
| 1851. | 338.0 | 7.0 |
| 1905. | 332.0 | 6.5 |
| 1960. | 332.0 | 7.9 |
| 2015. | 335.0 | 9.0 |

| RADIOSONDE DATE 04/04/77 TIME 05:00:00 LOCATION DPGWV | | | | | | | | | |
|---|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | OTHV/DZ (*1000) |
| 0. | 873.9 | 120. | 3.6 | .000 | 1.7 | -5.4 | 2.9 | 286.2 | .000 |
| 57. | 867.8 | | | | 3.8 | -4.8 | 3.1 | 289.0 | 48.993 |
| 108. | 862.3 | | | | 4.2 | -5.1 | 3.0 | 289.9 | 18.336 |
| 160. | 856.8 | | | | 4.0 | -5.2 | 3.0 | 290.2 | 6.172 |
| 225. | 850.0 | 250. | 2.4 | -.053 | 4.3 | -4.9 | 3.1 | 291.2 | 15.290 |
| 314. | 840.8 | | | | 4.6 | -4.4 | 3.3 | 292.5 | 14.062 |
| 609. | 810.7 | 324. | 4.7 | .060 | 3.0 | -4.4 | 3.4 | 293.9 | 4.694 |
| 796. | 792.3 | | | | 1.9 | -4.4 | 3.5 | 294.6 | 4.127 |
| 914. | 780.6 | 329. | 7.1 | .079 | .9 | -4.7 | 3.5 | 294.8 | 1.489 |
| 1219. | 751.3 | 333. | 8.5 | .046 | -1.7 | -5.4 | 3.4 | 295.2 | 1.333 |
| 1523. | 723.0 | 334. | 9.8 | .043 | -4.4 | -6.1 | 3.3 | 295.5 | .927 |
| 1755. | 702.3 | | | | -6.4 | -6.6 | 3.3 | 295.7 | 1.044 |
| 1780. | 700.0 | 337. | 10.2 | .016 | -6.6 | -6.8 | 3.3 | 295.8 | 1.936 |
| 1861. | 692.8 | | | | -7.3 | -7.5 | 3.1 | 295.8 | .882 |
| 1963. | 683.8 | | | | -7.3 | -7.5 | 3.2 | 297.0 | 10.941 |
| 2089. | 672.8 | | | | -8.1 | -8.2 | 3.1 | 297.4 | 3.660 |
| 2132. | 669.1 | 345. | 11.2 | .028 | -7.8 | -9.7 | 2.7 | 298.2 | 17.380 |
| 2247. | 659.3 | | | | -7.1 | -13.7 | 2.0 | 300.1 | 16.680 |
| 2437. | 643.4 | 347. | 13.0 | .059 | -7.5 | -16.1 | 1.7 | 301.7 | 8.363 |
| 2716. | 620.3 | | | | -8.1 | -19.5 | 1.3 | 304.0 | 8.397 |
| 2810. | 613.3 | | | | -8.5 | -19.9 | 1.3 | 304.6 | 6.307 |
| 3046. | 594.9 | 351. | 14.5 | .025 | -8.7 | -21.9 | 1.1 | 307.0 | 10.173 |
| 3192. | 583.8 | | | | -8.8 | -23.1 | 1.0 | 308.5 | 10.439 |
| 3350. | 572.0 | 358. | 17.3 | .092 | -9.5 | -24.3 | .9 | 309.5 | 6.135 |
| 3655. | 549.8 | 359. | 19.6 | .075 | -10.8 | -26.5 | .8 | 311.5 | 6.407 |
| 3775. | 541.3 | | | | -11.3 | -27.4 | .7 | 312.2 | 6.541 |
| 3959. | 528.4 | 355. | 21.6 | .066 | -12.5 | -28.3 | .7 | 313.0 | 3.872 |
| 4107. | 518.3 | | | | -13.5 | -29.1 | .7 | 313.5 | 3.498 |
| 4263. | 507.7 | 351. | 22.6 | .033 | -14.5 | -30.0 | .6 | 314.1 | 4.075 |
| 4379. | 500.0 | 351. | 22.6 | .000 | -15.3 | -30.6 | .6 | 314.8 | 25.250 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 04/04/77 | 14:25:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 32.0 | 2.0 |
| 146. | 350.0 | 1.8 |
| 204. | 347.0 | 2.0 |
| 259. | 320.0 | .9 |
| 314. | 267.0 | .8 |
| 369. | 298.0 | 1.1 |
| 424. | 302.0 | 1.4 |
| 479. | 312.0 | 2.0 |
| 533. | 320.0 | 2.3 |
| 588. | 320.0 | 2.9 |
| 643. | 310.0 | 3.2 |
| 698. | 305.0 | 3.5 |
| 753. | 303.0 | 4.0 |
| 808. | 298.0 | 3.8 |
| 863. | 296.0 | 3.2 |
| 918. | 308.0 | 3.0 |
| 972. | 321.0 | 2.5 |
| 1027. | 328.0 | 2.3 |
| 1082. | 328.0 | 2.9 |
| 1137. | 329.0 | 2.8 |
| 1192. | 333.0 | 3.2 |
| 1247. | 336.0 | 3.9 |
| 1302. | 343.0 | 4.0 |
| 1356. | 343.0 | 4.8 |
| 1411. | 342.0 | 5.2 |
| 1466. | 336.0 | 5.2 |
| 1521. | 336.0 | 5.0 |
| 1576. | 345.0 | 4.0 |
| 1631. | 349.0 | 3.5 |
| 1686. | 345.0 | 4.8 |
| 1741. | 329.0 | 5.0 |
| 1796. | 322.0 | 5.9 |
| 1851. | 330.0 | 8.0 |
| 1905. | 330.0 | 9.5 |
| 1960. | 325.0 | 9.5 |
| 2015. | 325.0 | 9.8 |

| RADIOSONDE DATE 05/04/77 TIME 05:00:00 LOCATION DPGWV | | | | | | | | | |
|---|---------------|-------------------|------------|------------|-----------------|------------------|---------------|-----------------|--------------------|
| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | W (M/S) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | OTHV/DZ (*1000) |
| 0. | 874.7 | 130. | 1.5 | .000 | -5.5 | -5.5 | 2.9 | 283.8 | .000 |
| 140. | 859.8 | | | | 7.8 | -8 | 4.2 | 294.1 | 73.659 |
| 234. | 850.0 | 222. | 2.6 | .047 | 8.3 | -9 | 4.2 | 295.6 | 15.895 |
| 305. | 842.8 | 174. | 1.6 | -.141 | 8.8 | -1.0 | 4.2 | 296.9 | 17.569 |
| 341. | 839.1 | | | | 9.0 | -1.0 | 4.2 | 297.4 | 16.333 |
| 609. | 812.2 | 268. | 1.6 | .000 | 7.2 | -3.6 | 3.6 | 298.2 | 2.817 |
| 862. | 787.6 | | | | 5.6 | -6.1 | 3.1 | 299.0 | 3.245 |
| 914. | 782.6 | 318. | 2.9 | .043 | 5.1 | -6.2 | 3.1 | 299.0 | .136 |
| 1219. | 753.7 | 342. | 5.0 | .069 | 2.6 | -6.7 | 3.1 | 299.5 | 1.702 |
| 1478. | 730.0 | | | | .4 | -7.2 | 3.0 | 299.9 | 1.291 |
| 1523. | 725.8 | 354. | 5.8 | .026 | -1 | -7.4 | 3.0 | 299.8 | -1.314 |
| 1813. | 700.0 | 4. | 5.3 | -.017 | -2.7 | -8.9 | 2.8 | 300.0 | .663 |
| 1818. | 699.5 | | | | -2.8 | -8.9 | 2.8 | 300.0 | -9.854 |
| 1828. | 698.7 | 5. | 5.3 | .000 | -2.8 | -9.0 | 2.8 | 300.1 | 9.477 |
| 1957. | 687.4 | | | | -3.2 | -10.7 | 2.5 | 301.0 | 6.975 |
| 2132. | 672.2 | 16. | 5.2 | -.003 | -4.7 | -10.7 | 2.5 | 301.2 | 1.475 |
| 2437. | 646.6 | 12. | 6.6 | .046 | -7.3 | -10.6 | 2.6 | 301.7 | 1.429 |
| 2578. | 635.0 | | | | -8.5 | -10.5 | 2.7 | 301.9 | 1.490 |
| 2741. | 621.8 | 1. | 9.6 | .099 | -9.2 | -13.2 | 2.2 | 302.8 | 5.684 |
| 2906. | 608.7 | | | | -9.8 | -15.9 | 1.8 | 303.9 | 6.557 |
| 3046. | 597.8 | 355. | 12.8 | .105 | -9.7 | -26.5 | .7 | 305.4 | 10.631 |
| 3061. | 596.6 | | | | -9.7 | -27.6 | .7 | 305.5 | 10.844 |
| 3165. | 588.6 | | | | -9.5 | -27.1 | .7 | 306.9 | 13.676 |
| 3350. | 574.5 | 353. | 14.5 | .056 | -11.0 | -26.6 | .7 | 307.3 | 2.092 |
| 3655. | 552.2 | 355. | 13.3 | -.039 | -13.4 | -25.7 | .8 | 308.0 | 2.204 |
| 3718. | 547.6 | | | | -13.9 | -25.6 | .9 | 308.2 | 2.322 |
| 3959. | 530.5 | 1. | 9.9 | -.112 | -15.4 | -24.9 | .9 | 309.2 | 4.257 |
| 4044. | 524.5 | | | | -16.0 | -24.6 | 1.0 | 309.5 | 3.440 |
| 4270. | 509.0 | | | | -18.0 | -30.0 | .6 | 309.6 | .747 |
| 4402. | 500.0 | 358. | 6.8 | -.070 | -19.1 | -32.0 | .5 | 309.9 | 1.694 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 05/04/77 | 14:19:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 285.0 | 1.0 |
| 146. | 319.0 | 1.6 |
| 204. | 322.0 | 2.5 |
| 259. | 315.0 | 3.8 |
| 314. | 311.0 | 3.7 |
| 369. | 288.0 | 1.9 |
| 424. | 248.0 | 2.1 |
| 479. | 251.0 | 2.8 |
| 533. | 256.0 | 1.8 |
| 588. | 260.0 | 1.1 |
| 643. | 312.0 | 1.2 |
| 698. | 324.0 | 1.8 |
| 753. | 312.0 | 1.1 |
| 808. | 307.0 | .8 |
| 863. | 330.0 | 1.3 |
| 918. | 336.0 | 2.6 |
| 972. | 331.0 | 2.5 |
| 1027. | 312.0 | 1.8 |
| 1082. | 303.0 | 1.1 |
| 1137. | 295.0 | 1.0 |
| 1192. | 297.0 | 1.5 |
| 1247. | 311.0 | 2.0 |
| 1302. | 306.0 | 2.3 |
| 1356. | 286.0 | 3.5 |
| 1411. | 275.0 | 3.2 |
| 1466. | 280.0 | 3.3 |
| 1521. | 284.0 | 3.5 |
| 1576. | 280.0 | 3.2 |
| 1631. | 273.0 | 3.0 |
| 1686. | 270.0 | 2.8 |
| 1741. | 263.0 | 2.5 |
| 1796. | 251.0 | 2.3 |
| 1851. | 254.0 | 1.5 |
| 1905. | 277.0 | .9 |
| 1960. | 277.0 | .8 |
| 2015. | 300.0 | .3 |

RADIO SCNDE DATE 06/04/77 TIME 05:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 875.1 | 70. | 1.5 | .000 | .4 | -5.4 | 2.9 | 284.7 | .000 |
| 115. | 862.8 | | | | 9.9 | .9 | 4.7 | 296.1 | 98.359 |
| 223. | 851.8 | | | | 11.4 | -5 | 4.3 | 298.7 | 24.205 |
| 240. | 850.0 | 197. | 2.5 | .042 | 11.3 | -7 | 4.3 | 298.8 | 3.876 |
| 305. | 843.4 | 154. | 2.6 | .015 | 11.1 | -1.3 | 4.1 | 299.2 | 6.591 |
| 547. | 819.3 | | | | 10.2 | -3.7 | 3.5 | 300.6 | 5.912 |
| 609. | 813.1 | 153. | 3.0 | .013 | 9.7 | -4.1 | 3.5 | 300.7 | 1.737 |
| 914. | 783.5 | 154. | 2.2 | -.026 | 7.6 | -6.4 | 3.0 | 301.6 | 2.844 |
| 1219. | 755.0 | 146. | 1.2 | -.033 | 5.4 | -8.6 | 2.6 | 302.4 | 2.475 |
| 1426. | 736.2 | | | | 4.0 | -10.1 | 2.4 | 303.0 | 2.968 |
| 1523. | 727.5 | 22. | .8 | -.013 | 3.4 | -9.9 | 2.5 | 303.4 | 3.982 |
| 1598. | 720.8 | | | | 3.0 | -9.7 | 2.5 | 303.7 | 5.007 |
| 1828. | 700.4 | 334. | 2.8 | .066 | 1.1 | -11.3 | 2.3 | 304.1 | 1.535 |
| 1833. | 700.0 | 334. | 2.8 | .000 | 1.1 | -11.4 | 2.3 | 304.1 | 9.303 |
| 2132. | 674.3 | 313. | 5.1 | .077 | -1.3 | -13.5 | 2.0 | 304.7 | 1.767 |
| 2247. | 664.8 | | | | -2.2 | -14.3 | 1.9 | 304.9 | 1.804 |
| 2437. | 648.9 | 308. | 8.2 | .102 | -3.9 | -16.0 | 1.7 | 305.0 | .806 |
| 2741. | 624.2 | 306. | 9.0 | .026 | -6.7 | -18.7 | 1.4 | 305.2 | .469 |
| 2926. | 607.6 | | | | -8.5 | -20.6 | 1.2 | 305.4 | 1.356 |
| 3046. | 600.4 | 286. | 6.1 | -.095 | -8.5 | -24.6 | .9 | 306.4 | 8.142 |
| 3062. | 599.1 | | | | -8.5 | -25.3 | .8 | 306.6 | 11.276 |
| 3350. | 577.2 | 242. | 5.7 | -.013 | -10.1 | -27.2 | .7 | 308.0 | 4.826 |
| 3483. | 567.3 | | | | -10.9 | -28.1 | .7 | 308.5 | 4.345 |
| 3655. | 554.7 | 234. | 6.5 | .026 | -11.8 | -30.9 | .5 | 309.4 | 5.209 |
| 3892. | 537.8 | | | | -13.2 | -34.8 | .4 | 310.5 | 4.427 |
| 3959. | 533.0 | 240. | 7.3 | .026 | -13.8 | -35.2 | .4 | 310.6 | 1.143 |
| 4263. | 511.9 | 242. | 7.9 | .020 | -16.4 | -36.8 | .3 | 311.0 | 1.485 |
| 4441. | 500.0 | 243. | 7.7 | -.011 | -18.0 | -37.8 | .3 | 311.2 | .807 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 06/04/77 | 14:55:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 3.0 | 1.4 |
| 146. | 57.0 | .8 |
| 204. | 111.0 | .7 |
| 259. | 118.0 | 1.0 |
| 314. | 93.0 | 1.3 |
| 369. | 73.0 | 1.7 |
| 424. | 69.0 | 1.5 |
| 479. | 77.0 | 1.8 |
| 533. | 86.0 | 1.6 |
| 588. | 125.0 | 1.4 |
| 643. | 161.0 | 1.8 |
| 698. | 172.0 | 2.3 |
| 753. | 170.0 | 3.1 |
| 808. | 164.0 | 3.0 |
| 863. | 159.0 | 3.2 |
| 918. | 162.0 | 3.7 |
| 972. | 166.0 | 4.2 |
| 1027. | 172.0 | 4.6 |
| 1082. | 171.0 | 4.8 |
| 1137. | 176.0 | 4.8 |
| 1192. | 185.0 | 4.8 |
| 1247. | 188.0 | 5.2 |
| 1302. | 195.0 | 5.5 |
| 1356. | 199.0 | 5.7 |
| 1411. | 191.0 | 5.9 |
| 1466. | 184.0 | 6.0 |
| 1521. | 186.0 | 5.0 |
| 1576. | 202.0 | 3.2 |
| 1631. | 224.0 | 2.5 |
| 1686. | 233.0 | 2.6 |
| 1741. | 224.0 | 2.9 |
| 1796. | 221.0 | 2.8 |
| 1851. | 252.0 | 2.3 |
| 1905. | 279.0 | 3.0 |
| 1960. | 274.0 | 3.5 |
| 2015. | 276.0 | 4.4 |

| RADIOSONDE | | DATE 07/04/77 | | TIME 05:00:00 | | LOCATION | | DPGMV | |
|------------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV# (DEG K) | DTHV/DZ (*1000) |
| 0. | 874.2 | 195. | 1.5 | .000 | 5.0 | -5.9 | 2.3 | 289.6 | .000 |
| 50. | 868.9 | | | | 6.3 | -7.1 | 2.6 | 291.9 | 46.792 |
| 106. | 863.0 | | | | 12.6 | -3.6 | 3.4 | 298.7 | 121.012 |
| 220. | 851.4 | | | | 13.8 | -4.8 | 3.1 | 301.0 | 20.798 |
| 234. | 850.0 | 159. | 6.1 | .197 | 13.8 | -4.9 | 3.1 | 301.2 | 9.879 |
| 305. | 842.9 | 157. | 6.8 | .099 | 13.6 | -5.5 | 3.0 | 301.7 | 6.928 |
| 609. | 812.9 | 174. | 7.1 | .010 | 12.9 | -8.0 | 2.6 | 304.0 | 7.625 |
| 620. | 811.8 | | | | 12.9 | -8.1 | 2.6 | 304.1 | 10.426 |
| 914. | 783.6 | 130. | 8.2 | .036 | 10.6 | -9.1 | 2.4 | 304.7 | 2.043 |
| 1219. | 755.3 | 181. | 8.8 | .020 | 8.1 | -10.2 | 2.3 | 305.2 | 1.597 |
| 1475. | 732.3 | | | | 6.1 | -11.1 | 2.2 | 305.7 | 1.970 |
| 1523. | 727.9 | 197. | 8.0 | -.026 | 5.7 | -11.3 | 2.2 | 305.8 | 1.762 |
| 1828. | 701.1 | 218. | 8.5 | .016 | 3.2 | -12.4 | 2.1 | 306.3 | 1.662 |
| 1840. | 700.0 | 219. | 8.5 | .000 | 3.1 | -12.5 | 2.1 | 306.3 | 2.011 |
| 2132. | 675.2 | 227. | 9.3 | .027 | .7 | -13.6 | 2.0 | 306.8 | 1.601 |
| 2178. | 669.8 | | | | .2 | -13.8 | 2.0 | 306.9 | 3.062 |
| 2437. | 649.9 | 230. | 9.5 | .007 | -2.0 | -14.5 | 1.9 | 307.1 | .608 |
| 2741. | 625.4 | 232. | 9.2 | -.010 | -4.9 | -15.4 | 1.8 | 307.1 | .198 |
| 2832. | 618.3 | | | | -5.7 | -15.6 | 1.8 | 307.2 | .921 |
| 3046. | 601.5 | 231. | 9.3 | .003 | -7.9 | -16.4 | 1.8 | 307.1 | -.609 |
| 3345. | 578.8 | | | | -10.9 | -17.4 | 1.7 | 307.0 | -.431 |
| 3350. | 578.4 | 232. | 9.1 | -.007 | -11.0 | -17.5 | 1.7 | 306.9 | -11.764 |
| 3655. | 555.6 | 240. | 9.4 | .010 | -13.9 | -18.2 | 1.6 | 307.0 | .361 |
| 3959. | 533.8 | 248. | 9.6 | .007 | -16.8 | -19.0 | 1.6 | 307.1 | .173 |
| 4005. | 524.3 | | | | -18.1 | -19.3 | 1.6 | 307.1 | .100 |
| 4263. | 512.5 | 253. | 9.6 | .000 | -19.6 | -20.6 | 1.4 | 307.2 | .968 |
| 4447. | 500.0 | 257. | 9.5 | -.005 | -21.2 | -21.9 | 1.3 | 307.5 | 1.097 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 07/04/77 | 15:59:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 105.0 | 1.0 |
| 146. | 132.0 | .1 |
| 204. | 345.0 | .7 |
| 259. | 12.0 | 1.1 |
| 314. | 16.0 | 1.4 |
| 369. | 7.0 | 1.0 |
| 424. | 30.0 | .9 |
| 479. | 16.0 | 1.2 |
| 533. | 330.0 | 1.4 |
| 588. | 296.0 | 1.6 |
| 972. | 297.0 | 3.3 |
| 1027. | 298.0 | 3.5 |
| 1082. | 303.0 | 3.8 |
| 1137. | 306.0 | 4.0 |
| 1192. | 296.0 | 3.8 |
| 1247. | 286.0 | 2.7 |
| 1302. | 279.0 | 2.0 |
| 1356. | 272.0 | 2.5 |
| 1411. | 271.0 | 3.7 |
| 1466. | 259.0 | 5.0 |
| 1521. | 247.0 | 5.2 |
| 1576. | 234.0 | 3.2 |
| 1631. | 204.0 | 2.5 |
| 1686. | 196.0 | 3.1 |
| 1741. | 190.0 | 3.5 |
| 1796. | 189.0 | 3.8 |
| 1851. | 210.0 | 4.5 |
| 1905. | 210.0 | 5.1 |
| 1960. | 222.0 | 5.0 |
| 2015. | 207.0 | 9.5 |

| RADIO SCNDE DATE 08/04/77 TIME 05:00:00 LOCATION DPGWV | | | | | | | | | |
|--|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| Z (M) | PRESS (MR) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV# (DEG K) | DTHV/DZ (*1000) |
| 0. | 871.4 | 125. | 3.1 | .000 | 9.1 | -6.3 | 2.7 | 294.1 | .000 |
| 127. | 858.3 | | | | 16.4 | -5.2 | 3.0 | 303.1 | 70.618 |
| 210. | 850.0 | 182. | 7.3 | .200 | 16.5 | -6.0 | 2.9 | 304.0 | 11.087 |
| 222. | 848.8 | | | | 16.5 | -6.1 | 2.9 | 304.1 | 9.960 |
| 305. | 840.5 | 170. | 7.1 | -.021 | 16.0 | -6.6 | 2.8 | 304.4 | 3.789 |
| 609. | 810.7 | 201. | 6.8 | -.010 | 14.0 | -8.1 | 2.6 | 305.4 | 3.263 |
| 745. | 797.8 | | | | 13.1 | -8.8 | 2.5 | 305.8 | 3.121 |
| 808. | 791.8 | | | | 13.0 | -9.0 | 2.4 | 306.4 | 8.733 |
| 914. | 781.9 | 216. | 8.9 | .069 | 12.1 | -9.5 | 2.4 | 306.5 | 1.182 |
| 1071. | 767.3 | | | | 10.8 | -10.3 | 2.3 | 306.7 | 1.484 |
| 1219. | 753.8 | 218. | 10.2 | .043 | 10.4 | -10.7 | 2.2 | 307.9 | 7.574 |
| 1308. | 745.8 | | | | 10.2 | -10.8 | 2.2 | 308.6 | 8.137 |
| 1523. | 726.5 | 206. | 10.4 | .007 | 8.3 | -11.8 | 2.1 | 308.8 | 1.003 |
| 1828. | 700.0 | 195. | 9.7 | -.023 | 5.6 | -13.2 | 2.0 | 309.1 | .904 |
| 2021. | 683.8 | | | | 3.9 | -14.0 | 1.9 | 309.2 | .849 |
| 2132. | 674.3 | 186. | 8.8 | -.030 | 2.8 | -14.4 | 1.9 | 309.2 | .004 |
| 2437. | 648.9 | 182. | 9.1 | .010 | -.3 | -15.3 | 1.8 | 309.1 | -.361 |
| 2741. | 624.6 | 181. | 9.0 | -.003 | -3.4 | -16.2 | 1.7 | 309.0 | -.559 |
| 3046. | 601.1 | 180. | 8.7 | -.010 | -6.4 | -17.1 | 1.7 | 308.9 | -.257 |
| 3190. | 590.3 | | | | -7.9 | -17.5 | 1.6 | 308.7 | -1.007 |
| 3350. | 578.2 | 198. | 7.0 | -.056 | -9.2 | -17.8 | 1.6 | 309.0 | 1.942 |
| 3396. | 574.8 | | | | -9.5 | -17.9 | 1.6 | 309.2 | 3.675 |
| 3464. | 569.8 | | | | -8.5 | -29.4 | .6 | 311.0 | 25.768 |
| 3655. | 555.9 | 250. | 9.0 | .066 | -9.2 | -31.2 | .5 | 312.3 | 7.124 |
| 3939. | 535.8 | | | | -10.3 | -34.2 | .4 | 314.3 | 6.936 |
| 3959. | 534.4 | 275. | 9.1 | .003 | -10.5 | -34.3 | .4 | 314.3 | -.230 |
| 4263. | 513.5 | 281. | 8.7 | -.013 | -13.3 | -34.5 | .4 | 314.5 | .721 |
| 4466. | 500.0 | 279. | 8.7 | .000 | -15.2 | -34.6 | .4 | 314.6 | .442 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| | | |
|----------|----------|------------|
| DATE | TIME | PLACE |
| 08/04/77 | 15:08:00 | DPGWV |
| HGT. | WIND DIR | WIND SPEED |
| (M) | (DEG) | (M/S) |
| 76. | 193.0 | 9.2 |
| 146. | 193.0 | 11.3 |
| 204. | 196.0 | 12.4 |
| 259. | 198.0 | 12.8 |
| 314. | 200.0 | 10.9 |
| 369. | 199.0 | 6.4 |
| 424. | 188.0 | 3.9 |
| 479. | 184.0 | 2.5 |
| 533. | 189.0 | 2.2 |
| 588. | 188.0 | 5.7 |
| 643. | 189.0 | 11.0 |
| 698. | 186.0 | 11.0 |
| 753. | 184.0 | 10.2 |
| 808. | 184.0 | 10.5 |
| 863. | 185.0 | 9.6 |
| 918. | 186.0 | 11.0 |
| 972. | 187.0 | 12.3 |
| 1027. | 186.0 | 14.5 |
| 1082. | 185.0 | 18.0 |
| 1137. | 187.0 | 22.9 |
| 1192. | 187.0 | 30.9 |
| 1247. | 186.0 | 31.8 |
| 1302. | 186.0 | 35.0 |
| 1356. | 188.0 | 43.8 |
| 1411. | 189.0 | 29.0 |
| 1466. | 190.0 | 36.6 |
| 1521. | 190.0 | 63.0 |
| 1576. | 190.0 | 64.0 |

NOT
Preceding Page BLANK - FILMED

APPENDIX C

SPECIAL RAWINSONDE AND PILOT BALLOON DATA

DUGWAY PROVING GROUND

NOTE

Rawinsonde data were obtained every three hours for parts of four days and all of one day. Pilot balloon observations were obtained between rawinsondes.

On two days, rawinsondes were taken at 1200 and 1400. On a third day a rawinsonde was taken at 1200 and on a fourth day at 2100.

RADIO SCNDE DATE 24/02/77 TIME 09:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 867.6 | 270. | 3.6 | .000 | .2 | -5.8 | 2.9 | 285.2 | .000 |
| 163. | 850.0 | 286. | 12.7 | .558 | -1.0 | -8.8 | 2.3 | 285.5 | 1.976 |
| 305. | 835.0 | 289. | 10.5 | -.155 | -2.1 | -11.5 | 1.9 | 285.7 | 1.590 |
| 451. | 819.8 | | | | -3.3 | -14.2 | 1.5 | 285.9 | 1.187 |
| 609. | 803.3 | 297. | 9.0 | -.049 | -4.7 | -14.4 | 1.6 | 286.1 | 1.117 |
| 914. | 772.5 | 306. | 8.0 | -.033 | -7.4 | -14.7 | 1.6 | 286.4 | 1.020 |
| 1219. | 742.8 | 313. | 8.7 | .023 | -10.2 | -15.0 | 1.6 | 286.6 | .596 |
| 1459. | 720.2 | | | | -12.4 | -15.3 | 1.6 | 286.7 | .527 |
| 1523. | 714.1 | 322. | 10.5 | .059 | -12.8 | -15.9 | 1.5 | 287.0 | 3.843 |
| 1673. | 700.0 | 328. | 11.6 | .073 | -13.9 | -17.2 | 1.4 | 287.3 | 2.659 |
| 1828. | 685.8 | 332. | 11.9 | .019 | -15.1 | -18.5 | 1.3 | 287.7 | 2.129 |
| 2132. | 658.6 | 339. | 11.3 | -.020 | -17.4 | -21.2 | 1.1 | 288.4 | 2.353 |
| 2437. | 632.5 | 345. | 9.1 | -.072 | -19.6 | -23.8 | .9 | 289.2 | 2.664 |
| 2526. | 625.0 | | | | -20.3 | -24.6 | .8 | 289.4 | 2.001 |
| 2741. | 606.8 | 346. | 7.8 | -.043 | -22.2 | -26.6 | .7 | 289.6 | 1.128 |
| 3046. | 581.8 | 342. | 7.6 | -.007 | -24.8 | -29.5 | .6 | 290.1 | 1.454 |
| 3350. | 557.9 | 335. | 7.6 | .000 | -27.4 | -32.4 | .4 | 290.5 | 1.337 |
| 3655. | 535.0 | 321. | 8.0 | .013 | -30.1 | -35.3 | .3 | 290.7 | .839 |
| 3720. | 530.2 | | | | -30.6 | -35.9 | .3 | 290.9 | 2.271 |
| 3959. | 512.5 | 309. | 8.9 | .030 | -32.7 | -38.2 | .3 | 291.2 | 1.192 |
| 4133. | 500.0 | 306. | 9.2 | .017 | -34.2 | -40.0 | .2 | 291.4 | 1.305 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| | | |
|----------|----------|------------|
| DATE | TIME | PLACE |
| 24/02/77 | 10:26:00 | DPGWV |
| ----- | | |
| HGT. | WIND DIR | WIND SPEED |
| (M) | (DEG) | (M/S) |
| ----- | | |
| 76. | 304.0 | 9.1 |
| 146. | 301.0 | 5.7 |
| 204. | 298.0 | 4.4 |
| 259. | 299.0 | 5.3 |
| 314. | 299.0 | 5.5 |
| 369. | 298.0 | 4.5 |
| 424. | 298.0 | 4.2 |
| 479. | 297.0 | 4.6 |
| 533. | 299.0 | 4.8 |
| 588. | 303.0 | 4.9 |
| 643. | 307.0 | 4.1 |
| 698. | 308.0 | 3.6 |
| 753. | 310.0 | 4.1 |
| 808. | 314.0 | 4.5 |
| 863. | 314.0 | 4.6 |
| 918. | 315.0 | 4.6 |
| 972. | 315.0 | 5.4 |
| 1027. | 313.0 | 5.7 |
| ----- | | |

RADIOSONDE DATE 24/02/77 TIME 12:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | OTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 867.6 | 315. | 5.4 | .000 | 3.8 | -6.5 | 2.7 | 288.9 | .000 |
| 53. | 862.0 | | | | 1.1 | -14.1 | 1.5 | 286.4 | -47.170 |
| 164. | 850.0 | 305. | 9.8 | .268 | .0 | -14.4 | 1.5 | 286.4 | -.049 |
| 305. | 835.0 | 312. | 8.4 | -.099 | -1.4 | -14.6 | 1.5 | 286.4 | -.092 |
| 609. | 803.5 | 314. | 8.0 | -.013 | -4.6 | -15.2 | 1.5 | 286.2 | -.807 |
| 865. | 778.0 | | | | -7.2 | -15.7 | 1.4 | 286.0 | -.573 |
| 914. | 773.1 | 316. | 7.5 | -.016 | -7.7 | -16.0 | 1.4 | 286.0 | -.532 |
| 1219. | 743.3 | 321. | 6.5 | -.033 | -10.6 | -17.4 | 1.3 | 286.0 | .180 |
| 1230. | 742.2 | | | | -10.7 | -17.5 | 1.3 | 286.0 | .964 |
| 1523. | 714.1 | 327. | 5.3 | -.039 | -13.2 | -18.1 | 1.3 | 286.5 | 1.424 |
| 1675. | 700.0 | 328. | 4.8 | -.033 | -14.5 | -18.5 | 1.3 | 286.7 | 1.281 |
| 1828. | 686.0 | 329. | 4.3 | -.033 | -15.8 | -18.8 | 1.3 | 286.9 | 1.378 |
| 1929. | 677.0 | | | | -16.6 | -19.1 | 1.2 | 287.1 | 1.858 |
| 2132. | 658.9 | 320. | 4.5 | .007 | -17.9 | -21.5 | 1.0 | 287.8 | 3.603 |
| 2408. | 635.0 | | | | -19.7 | -24.8 | .8 | 288.8 | 3.495 |
| 2437. | 632.5 | 317. | 5.3 | .026 | -19.9 | -25.0 | .8 | 288.8 | 3.306 |
| 2741. | 607.0 | 319. | 5.9 | .020 | -22.1 | -27.1 | .7 | 289.7 | 2.833 |
| 2863. | 597.0 | | | | -22.9 | -28.0 | .6 | 290.2 | 3.642 |
| 3046. | 582.0 | 321. | 6.3 | .013 | -24.6 | -29.5 | .6 | 290.3 | .665 |
| 3350. | 557.7 | 321. | 6.5 | .007 | -27.4 | -32.1 | .5 | 290.5 | .769 |
| 3655. | 534.5 | 323. | 6.3 | -.007 | -30.2 | -34.7 | .4 | 290.7 | .609 |
| 3959. | 512.2 | 330. | 5.5 | -.026 | -33.0 | -37.3 | .3 | 290.9 | .528 |
| 4132. | 500.0 | 328. | 5.4 | -.006 | -34.6 | -38.8 | .3 | 290.9 | .316 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| | | |
|----------|----------|-------|
| DATE | TIME | PLACE |
| 24/02/77 | 14:00:00 | DPGWV |

| | | |
|------|----------|------------|
| HGT. | WIND DIR | WIND SPEED |
| (M) | (DEG) | (M/S) |

| | | |
|------|-------|-----|
| 76. | 333.0 | 6.3 |
| 146. | 331.0 | 5.8 |
| 204. | 332.0 | 4.9 |
| 259. | 333.0 | 4.1 |
| 314. | 333.0 | 4.2 |
| 369. | 335.0 | 4.6 |
| 424. | 335.0 | 4.4 |
| 479. | 330.0 | 3.1 |
| 533. | 329.0 | 3.5 |
| 588. | 330.0 | 2.2 |
| 643. | 330.0 | 1.9 |
| 698. | 325.0 | 2.3 |
| 753. | 324.0 | 3.3 |
| 808. | 325.0 | 3.6 |

RADIO SCNDE DATE 24/02/77 TIME 15:00:00 LOCATION DPGWV

| Z (M) | PRESS (MP) | WIND DIR (DEG) | U (M/S) | DU/DZ (#10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | OTHV/DZ (#1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 865.6 | 315. | 6.7 | .000 | 2.9 | -9.8 | 2.1 | 289.0 | .000 |
| 154. | 850.0 | 340. | 5.1 | -.104 | 2.1 | -10.9 | 2.0 | 298.7 | -2.008 |
| 305. | 834.1 | 0. | 4.6 | -.033 | .4 | -12.0 | 1.8 | 288.4 | -1.672 |
| 609. | 802.8 | 338. | 5.1 | .016 | -3.1 | -14.3 | 1.6 | 287.8 | -1.983 |
| 914. | 772.7 | 330. | 6.3 | .039 | -6.5 | -16.5 | 1.4 | 287.3 | -1.763 |
| 921. | 772.0 | 309. | 7.6 | 2.143 | -6.6 | -16.6 | 1.3 | 287.3 | -5.010 |
| 1219. | 743.0 | 327. | 9.3 | .050 | -9.6 | -17.5 | 1.3 | 287.2 | -.384 |
| 1271. | 733.0 | | | | -10.1 | -17.6 | 1.3 | 287.2 | .170 |
| 1523. | 713.8 | 321. | 9.7 | .013 | -12.4 | -19.4 | 1.1 | 287.4 | .757 |
| 1672. | 700.0 | 317. | 9.2 | -.034 | -13.8 | -20.4 | 1.1 | 287.4 | .298 |
| 1828. | 685.7 | 313. | 8.8 | -.026 | -15.2 | -21.5 | 1.0 | 287.5 | .816 |
| 2132. | 658.8 | 311. | 8.2 | -.020 | -18.0 | -23.6 | .9 | 287.7 | .425 |
| 2184. | 654.3 | | | | -18.5 | -24.0 | .8 | 287.7 | -.090 |
| 2437. | 632.4 | 312. | 8.2 | .000 | -19.6 | -26.4 | .7 | 289.2 | 6.067 |
| 2534. | 624.2 | | | | -20.1 | -27.3 | .6 | 289.7 | 5.163 |
| 2741. | 606.7 | | | | -21.9 | -30.2 | .5 | 290.0 | 1.273 |
| 3046. | 581.9 | 308. | 6.3 | -.031 | -24.5 | -34.6 | .3 | 290.4 | 1.366 |
| 3350. | 558.2 | 311. | 5.2 | -.036 | -27.1 | -38.9 | .2 | 290.8 | 1.255 |
| 3471. | 549.0 | | | | -28.1 | -40.6 | .2 | 290.9 | 1.586 |
| 3655. | 534.9 | 312. | 5.2 | .000 | -29.9 | -41.3 | .2 | 291.0 | .100 |
| 3959. | 512.4 | 304. | 5.4 | .007 | -32.9 | -42.4 | .2 | 290.9 | -.121 |
| 4133. | 500.0 | 302. | 5.3 | -.006 | -34.6 | -43.0 | .2 | 290.9 | -.165 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 24/02/77 | 16:00:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 34.0 | 6.5 |
| 146. | 32.0 | 6.0 |
| 204. | 30.0 | 4.9 |
| 259. | 29.0 | 5.0 |
| 314. | 29.0 | 5.3 |
| 369. | 25.0 | 4.5 |
| 424. | 2.0 | 3.6 |
| 479. | 330.0 | 3.1 |
| 533. | 303.0 | 2.2 |
| 588. | 277.0 | 1.8 |
| 643. | 284.0 | 1.8 |
| 698. | 304.0 | 2.1 |
| 753. | 292.0 | 2.1 |
| 808. | 282.0 | 2.7 |
| 863. | 298.0 | 3.1 |
| 918. | 318.0 | 3.5 |
| 972. | 323.0 | 4.6 |
| 1027. | 319.0 | 5.4 |
| 1082. | 312.0 | 5.3 |
| 1137. | 311.0 | 5.4 |
| 1192. | 312.0 | 5.6 |
| 1247. | 316.0 | 5.1 |
| 1302. | 316.0 | 4.9 |
| 1356. | 314.0 | 5.1 |
| 1411. | 312.0 | 4.6 |
| 1466. | 303.0 | 4.9 |
| 1521. | 291.0 | 4.6 |
| 1579. | 282.0 | 4.5 |
| 1631. | 279.0 | 4.9 |
| 1686. | 281.0 | 5.4 |

RADIO SCNDE DATE 24/02/77 TIME 18:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTHV/DZ |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|---------|
| 0. | 866.3 | 360. | 3.6 | .000 | 1.4 | -6.9 | 2.6 | 286.5 | .000 |
| 35. | 862.5 | | | | 1.1 | -11.4 | 1.8 | 286.4 | -2.534 |
| 151. | 850.0 | 351. | 4.4 | .053 | .0 | -11.8 | 1.8 | 286.5 | .338 |
| 305. | 833.6 | 12. | 4.3 | -.006 | -1.4 | -12.2 | 1.8 | 286.6 | .781 |
| 609. | 802.2 | 352. | 4.2 | -.003 | -4.2 | -13.1 | 1.7 | 286.8 | .554 |
| 914. | 771.9 | 335. | 4.5 | .010 | -7.1 | -14.0 | 1.7 | 286.8 | .126 |
| 959. | 767.5 | | | | -7.5 | -14.2 | 1.7 | 286.8 | .761 |
| 1206. | 743.5 | | | | -9.7 | -15.0 | 1.6 | 287.0 | .855 |
| 1219. | 742.2 | 330. | 5.5 | .033 | -9.8 | -15.1 | 1.6 | 287.1 | 2.528 |
| 1523. | 713.2 | 327. | 5.5 | .000 | -12.5 | -17.9 | 1.3 | 287.3 | .871 |
| 1666. | 700.0 | 326. | 6.7 | .084 | -13.7 | -19.1 | 1.2 | 287.5 | 1.335 |
| 1828. | 685.3 | 325. | 6.8 | .006 | -15.1 | -20.6 | 1.1 | 287.7 | 1.037 |
| 1915. | 677.5 | | | | -15.9 | -21.3 | 1.0 | 287.7 | .453 |
| 2132. | 657.9 | 324. | 6.7 | -.003 | -17.7 | -22.7 | .9 | 288.1 | 1.749 |
| 2437. | 631.4 | 326. | 6.0 | -.023 | -20.2 | -24.5 | .8 | 288.7 | 1.758 |
| 2741. | 606.0 | 325. | 5.5 | -.016 | -22.6 | -26.4 | .7 | 289.3 | 2.041 |
| 3003. | 585.0 | | | | -24.8 | -28.0 | .6 | 289.6 | 1.348 |
| 3046. | 581.5 | 320. | 5.0 | -.016 | -25.1 | -28.5 | .6 | 289.8 | 3.314 |
| 3350. | 557.1 | 314. | 3.9 | -.036 | -27.7 | -32.1 | .5 | 290.2 | 1.550 |
| 3655. | 523.3 | 316. | 1.7 | -.072 | -30.3 | -35.6 | .3 | 290.7 | 1.426 |
| 3959. | 511.5 | 314. | 4.1 | .079 | -32.9 | -39.2 | .2 | 291.1 | 1.324 |
| 4121. | 500.0 | 320. | 3.8 | -.019 | -34.3 | -41.1 | .2 | 291.3 | 1.142 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

DATE TIME PLACE
24/02/77 20:00:00 DPGWV

| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
|-------------|-------------------|---------------------|
| 76. | 321.0 | 4.1 |
| 146. | 346.0 | 3.9 |
| 204. | 350.0 | 3.4 |
| 259. | 337.0 | 4.0 |
| 314. | 335.0 | 5.1 |
| 369. | 340.0 | 5.2 |
| 424. | 349.0 | 5.0 |
| 479. | 354.0 | 4.8 |
| 533. | 358.0 | 4.7 |
| 588. | 3.0 | 4.5 |
| 643. | 6.0 | 4.6 |
| 698. | 6.0 | 4.9 |
| 753. | 6.0 | 5.3 |

| RADIOSONDE | | DATE 24/02/77 | TIME 21:00:00 | LOCATION | DPGW | | | | | | |
|------------|---------------|-------------------|---------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|--|--|
| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV# (DEG K) | DTHV/DZ (*1000) | | |
| 0. | 867.1 | 290. | 2.2 | .000 | -2.2 | -5.5 | 2.9 | 232.7 | .000 | | |
| 158. | 850.0 | 322. | 5.9 | .234 | -2.6 | -7.3 | 2.6 | 283.9 | 7.208 | | |
| 288. | 836.2 | | | | -2.9 | -8.7 | 2.4 | 284.9 | 7.506 | | |
| 609. | 802.8 | 344. | 9.7 | .302 | -5.1 | -10.3 | 2.2 | 285.8 | 2.992 | | |
| 662. | 797.5 | | | | -5.4 | -10.6 | 2.1 | 286.0 | 4.056 | | |
| 914. | 772.0 | 350. | 9.9 | .393 | -8.0 | -12.0 | 2.0 | 285.9 | -.639 | | |
| 1181. | 746.0 | | | | -10.7 | -13.6 | 1.8 | 285.7 | -.585 | | |
| 1219. | 742.3 | 350. | 9.2 | 2.421 | -11.0 | -13.7 | 1.8 | 285.8 | 2.067 | | |
| 1453. | 720.0 | | | | -12.8 | -14.8 | 1.7 | 286.3 | 2.164 | | |
| 1523. | 713.3 | 345. | 9.1 | 1.300 | -13.3 | -15.3 | 1.6 | 286.5 | 2.942 | | |
| 1664. | 700.0 | 343. | 8.9 | -.014 | -14.5 | -16.2 | 1.5 | 286.7 | 1.423 | | |
| 1828. | 684.9 | 339. | 8.7 | -.012 | -15.8 | -17.3 | 1.4 | 297.0 | 1.984 | | |
| 2132. | 657.7 | 334. | 8.0 | -.023 | -18.3 | -19.3 | 1.3 | 287.5 | 1.627 | | |
| 2437. | 631.6 | 336. | 6.8 | -.039 | -20.8 | -21.4 | 1.1 | 288.0 | 1.530 | | |
| 2473. | 628.5 | | | | -21.1 | -21.6 | 1.1 | 288.1 | 1.675 | | |
| 2741. | 606.0 | 348. | 5.9 | .220 | -23.3 | -31.6 | .4 | 288.4 | 1.371 | | |
| 2754. | 605.0 | | | | -23.3 | -32.1 | .4 | 288.6 | 10.208 | | |
| 3046. | 581.1 | 355. | 5.9 | .202 | -25.8 | -34.3 | .4 | 289.0 | 1.414 | | |
| 3350. | 557.2 | 1. | 6.3 | .013 | -28.3 | -36.5 | .3 | 289.5 | 1.730 | | |
| 3389. | 554.2 | | | | -28.6 | -36.8 | .3 | 289.6 | 2.328 | | |
| 3655. | 533.7 | 6. | 6.4 | .241 | -30.8 | -37.7 | .3 | 290.1 | 1.889 | | |
| 3959. | 511.3 | 16. | 6.9 | .016 | -33.4 | -38.8 | .3 | 290.5 | 1.400 | | |
| 4116. | 500.0 | 11. | 6.2 | -.045 | -34.7 | -39.3 | .2 | 290.8 | 1.759 | | |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 24/02/77 | 22:00:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 355.0 | 8.7 |
| 146. | 356.0 | 9.6 |
| 204. | 357.0 | 8.7 |
| 259. | 12.0 | 10.3 |
| 314. | 15.0 | 11.0 |
| 369. | 8.0 | 10.1 |
| 424. | 15.0 | 8.7 |
| 479. | 6.0 | 10.3 |
| 533. | 1.0 | 9.4 |
| 588. | 2.0 | 11.2 |
| 643. | 7.0 | 13.4 |
| 698. | 15.0 | 5.8 |
| 753. | 29.0 | 2.7 |
| 808. | 25.0 | 3.1 |
| 863. | 13.0 | 9.4 |
| 918. | 11.0 | 12.1 |
| 972. | 11.0 | 8.5 |
| 1027. | 11.0 | 9.8 |
| 1082. | 12.0 | 8.5 |
| 1137. | 16.0 | 8.9 |

RACIOSNDE DATE 25/02/77 TIME 00:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV# (DEG K) | DTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 867.7 | 330. | 6.3 | .000 | -1.2 | -6.7 | 2.7 | 283.7 | .000 |
| 164. | 850.0 | 333. | 8.9 | .159 | -2.6 | -8.7 | 2.3 | 283.8 | .913 |
| 206. | 845.5 | | | | -3.0 | -9.2 | 2.2 | 283.8 | -.060 |
| 305. | 834.9 | 345. | 8.5 | -.028 | -3.8 | -5.3 | 2.3 | 284.0 | 1.862 |
| 609. | 803.1 | 345. | 9.5 | .033 | -6.4 | -9.5 | 2.3 | 284.4 | 1.345 |
| 878. | 776.0 | | | | -8.8 | -9.7 | 2.4 | 284.7 | .853 |
| 914. | 772.4 | 348. | 9.0 | -.016 | -9.0 | -10.0 | 2.3 | 284.8 | 4.317 |
| 1219. | 742.3 | 351. | 9.0 | .000 | -11.3 | -12.6 | 1.9 | 285.5 | 2.248 |
| 1523. | 713.3 | 348. | 9.4 | .013 | -13.7 | -15.1 | 1.7 | 286.1 | 1.888 |
| 1667. | 700.0 | 347. | 9.7 | .021 | -14.8 | -16.4 | 1.5 | 286.4 | 2.083 |
| 1766. | 691.0 | | | | -15.5 | -17.2 | 1.4 | 286.6 | 2.718 |
| 1828. | 685.3 | 347. | 10.1 | .025 | -16.0 | -17.6 | 1.4 | 286.8 | 1.870 |
| 2132. | 657.9 | 354. | 11.0 | .030 | -18.3 | -19.7 | 1.2 | 287.5 | 2.432 |
| 2241. | 649.0 | 4. | 12.7 | .193 | -20.6 | -25.5 | .7 | 285.9 | -14.679 |
| 2437. | 631.6 | 360. | 11.4 | .013 | -20.7 | -21.8 | 1.1 | 288.1 | 1.989 |
| 2617. | 616.5 | | | | -22.1 | -23.0 | 1.0 | 288.5 | 2.194 |
| 2741. | 606.0 | 7. | 10.3 | -.036 | -23.1 | -24.1 | .9 | 288.7 | 1.890 |
| 3046. | 580.9 | 15. | 9.0 | -.043 | -25.6 | -27.0 | .7 | 289.3 | 1.840 |
| 3350. | 556.9 | 16. | 9.1 | .003 | -28.1 | -29.8 | .6 | 289.8 | 1.744 |
| 3655. | 533.9 | 15. | 9.2 | .003 | -30.6 | -32.7 | .5 | 290.3 | 1.050 |
| 3831. | 521.0 | | | | -32.0 | -34.3 | .4 | 290.7 | 1.935 |
| 3959. | 511.6 | 17. | 8.8 | -.013 | -33.1 | -35.5 | .4 | 290.8 | 1.391 |
| 4120. | 500.0 | 17. | 8.8 | .000 | -34.4 | -37.1 | .3 | 291.2 | 1.990 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|----------|----------|-------|
| 25/02/77 | 02:00:00 | DPGWV |

| HGT. | WIND DIR | WIND SPEED |
|------|----------|------------|
| (M) | (DEG) | (M/S) |

| | | |
|-------|-------|------|
| 76. | 351.0 | 7.8 |
| 146. | 352.0 | 9.3 |
| 204. | 352.0 | 10.3 |
| 259. | 351.0 | 12.2 |
| 314. | 350.0 | 13.1 |
| 369. | 347.0 | 13.0 |
| 424. | 346.0 | 14.3 |
| 479. | 345.0 | 12.5 |
| 533. | 345.0 | 10.0 |
| 588. | 345.0 | 11.6 |
| 643. | 344.0 | 10.5 |
| 698. | 344.0 | 10.7 |
| 753. | 345.0 | 13.4 |
| 808. | 340.0 | 9.8 |
| 863. | 351.0 | 7.2 |
| 918. | 354.0 | 8.9 |
| 972. | 345.0 | 7.6 |
| 1027. | 3.0 | 2.2 |
| 1082. | 134.0 | 3.6 |

RADIOSONDE DATE 25/J2/77 TIME 03:00:00 LOCATION OPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | WR (GM/KG) | THV* (DEG K) | OTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 868.3 | 335. | 5.0 | .000 | -4.9 | -8.9 | 2.2 | 279.7 | .000 |
| 89. | 859.5 | | | | -2.6 | -4.1 | 3.3 | 283.2 | 39.272 |
| 169. | 850.0 | 340. | 8.5 | .207 | -2.9 | -5.1 | 3.1 | 283.6 | 5.699 |
| 197. | 847.0 | | | | -3.0 | -5.5 | 3.0 | 283.8 | 5.990 |
| 305. | 835.5 | 355. | 8.5 | .000 | -4.1 | -6.5 | 2.8 | 283.7 | -.741 |
| 527. | 811.0 | | | | -6.2 | -8.6 | 2.5 | 283.9 | .565 |
| 609. | 803.7 | 350. | 8.5 | .000 | -6.1 | -9.2 | 2.4 | 294.7 | 11.468 |
| 905. | 773.8 | | | | -8.6 | -12.0 | 2.0 | 285.0 | 1.148 |
| 914. | 772.9 | 343. | 7.3 | -.039 | -8.7 | -12.0 | 2.0 | 285.0 | -1.388 |
| 1219. | 742.9 | 353. | 6.7 | -.020 | -11.4 | -13.0 | 1.9 | 285.3 | .946 |
| 1394. | 726.2 | | | | -12.9 | -13.6 | 1.8 | 285.5 | 1.184 |
| 1523. | 713.9 | 356. | 6.4 | -.010 | -13.9 | -14.8 | 1.7 | 285.8 | 2.099 |
| 1672. | 700.0 | 359. | 6.9 | .034 | -14.9 | -16.1 | 1.5 | 286.3 | 3.208 |
| 1828. | 685.7 | 1. | 7.8 | .058 | -16.0 | -17.5 | 1.4 | 286.7 | 2.841 |
| 2005. | 669.8 | | | | -17.3 | -19.2 | 1.2 | 287.2 | 2.502 |
| 2132. | 658.5 | 5. | 10.6 | .092 | -18.2 | -21.1 | 1.1 | 287.5 | 2.801 |
| 2241. | 649.0 | 4. | 12.7 | .193 | -20.6 | -25.5 | .7 | 285.9 | -14.679 |
| 2437. | 632.1 | 6. | 12.3 | -.020 | -20.6 | -25.5 | .8 | 288.1 | 11.068 |
| 2485. | 628.0 | | | | -20.9 | -26.1 | .7 | 288.3 | 3.908 |
| 2741. | 606.4 | 4. | 12.5 | .007 | -23.0 | -27.9 | .6 | 288.7 | 1.799 |
| 3045. | 581.7 | 357. | 14.2 | .056 | -25.5 | -30.1 | .5 | 289.3 | 1.702 |
| 3105. | 577.0 | | | | -26.0 | -30.5 | .5 | 289.3 | 1.396 |
| 3263. | 564.5 | | | | -27.0 | -32.7 | .4 | 290.0 | 3.951 |
| 3350. | 557.7 | 353. | 14.8 | .020 | -27.4 | -35.0 | .3 | 290.5 | 5.969 |
| 3450. | 550.0 | | | | -27.9 | -37.5 | .3 | 291.0 | 5.510 |
| 3655. | 534.4 | 354. | 16.0 | .039 | -29.7 | -38.4 | .3 | 291.3 | 1.211 |
| 3959. | 512.0 | 350. | 11.6 | -.145 | -32.4 | -39.8 | .2 | 291.6 | 1.035 |
| 4074. | 503.8 | | | | -33.4 | -40.3 | .2 | 291.7 | 1.142 |
| 4127. | 500.0 | 358. | 11.8 | .012 | -33.8 | -41.0 | .2 | 291.9 | 2.681 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| | | |
|----------|----------|-------|
| DATE | TIME | PLACE |
| 25/02/77 | 05:00:00 | DPGWV |

| HGT. | WIND DIR | WIND SPEED |
|------|----------|------------|
| (M) | (DEG) | (M/S) |

| | | |
|-------|-------|------|
| 76. | 356.0 | 6.6 |
| 146. | 352.0 | 8.9 |
| 204. | 360.0 | 9.3 |
| 259. | 360.0 | 9.2 |
| 314. | 353.0 | 10.4 |
| 369. | 353.0 | 9.4 |
| 424. | 352.0 | 8.1 |
| 479. | 352.0 | 8.1 |
| 533. | 353.0 | 9.4 |
| 588. | 351.0 | 10.3 |
| 643. | 349.0 | 11.2 |
| 698. | 348.0 | 10.7 |
| 753. | 348.0 | 8.9 |
| 808. | 347.0 | 11.2 |
| 863. | 347.0 | 12.1 |
| 918. | 350.0 | 11.6 |
| 972. | 350.0 | 10.7 |
| 1027. | 350.0 | 12.1 |
| 1082. | 349.0 | 13.9 |
| 1137. | 349.0 | 13.4 |

RADIOSONDE DATE 25/02/77 TIME 06:00:00 LOCATION QPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | UTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 869.8 | 340. | 2.7 | .000 | -5.0 | -12.0 | 1.7 | 279.4 | .000 |
| 131. | 855.5 | | | | -4.0 | -9.5 | 2.2 | 281.8 | 18.680 |
| 181. | 850.0 | 337. | 8.0 | .293 | -4.4 | -9.8 | 2.1 | 281.9 | 1.887 |
| 305. | 836.7 | 349. | 7.6 | -.032 | -5.2 | -10.5 | 2.0 | 282.3 | 3.364 |
| 584. | 807.5 | | | | -7.2 | -11.9 | 1.9 | 283.1 | 2.609 |
| 609. | 804.8 | 349. | 9.4 | .059 | -7.4 | -11.9 | 1.9 | 283.1 | 2.372 |
| 863. | 779.0 | | | | -9.4 | -11.2 | 2.1 | 283.6 | 2.089 |
| 914. | 773.8 | 358. | 10.0 | .020 | -9.8 | -11.7 | 2.0 | 283.7 | 1.980 |
| 1219. | 743.7 | 2. | 11.0 | .033 | -12.5 | -14.8 | 1.6 | 284.0 | .750 |
| 1255. | 740.2 | | | | -12.8 | -14.5 | 1.7 | 284.0 | 1.793 |
| 1523. | 714.5 | 6. | 11.4 | .013 | -14.9 | -16.2 | 1.5 | 284.6 | 2.021 |
| 1678. | 700.0 | 11. | 11.4 | .000 | -16.1 | -17.0 | 1.4 | 284.9 | 2.139 |
| 1818. | 687.2 | | | | -17.2 | -17.7 | 1.4 | 285.2 | 1.944 |
| 1828. | 686.3 | 16. | 16.6 | .347 | -17.3 | -18.3 | 1.3 | 285.2 | -1.621 |
| 1938. | 676.2 | | | | -17.7 | -24.6 | .8 | 285.8 | 6.079 |
| 2132. | 658.6 | 21. | 12.3 | -.141 | -19.2 | -26.1 | .7 | 286.3 | 2.366 |
| 2437. | 632.0 | 18. | 13.4 | .036 | -21.6 | -28.5 | .6 | 286.9 | 2.092 |
| 2741. | 606.4 | 13. | 13.9 | .016 | -24.0 | -30.9 | .5 | 287.6 | 2.060 |
| 2987. | 586.5 | | | | -25.9 | -32.8 | .4 | 288.1 | 2.162 |
| 3046. | 581.7 | 12. | 12.6 | -.043 | -26.4 | -33.5 | .4 | 288.2 | 1.521 |
| 3550. | 557.4 | 12. | 16.0 | .067 | -29.0 | -37.1 | .3 | 288.6 | .886 |
| 3655. | 534.2 | 16. | 17.4 | .133 | -31.5 | -40.8 | .2 | 289.2 | 5.001 |
| 3678. | 532.5 | | | | -31.7 | -41.0 | .2 | 289.2 | 1.025 |
| 3959. | 511.6 | 21. | 17.9 | .016 | -33.9 | -43.1 | .2 | 289.8 | 2.347 |
| 4120. | 500.0 | 23. | 17.5 | -.025 | -35.1 | -44.3 | .1 | 290.3 | 2.741 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 25/02/77 | 08:00:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 359.0 | 5.8 |
| 146. | 357.0 | 8.0 |
| 204. | 352.0 | 8.0 |
| 259. | 347.0 | 8.0 |
| 314. | 345.0 | 11.1 |
| 369. | 343.0 | 11.7 |
| 424. | 341.0 | 9.3 |
| 479. | 341.0 | 9.7 |
| 533. | 342.0 | 9.8 |
| 588. | 342.0 | 10.3 |
| 643. | 343.0 | 10.3 |
| 698. | 344.0 | 8.9 |
| 753. | 346.0 | 9.8 |
| 808. | 346.0 | 9.8 |
| 863. | 346.0 | 10.3 |
| 918. | 345.0 | 10.7 |
| 972. | 344.0 | 9.8 |
| 1027. | 344.0 | 8.9 |
| 1082. | 343.0 | 9.4 |
| 1137. | 346.0 | 10.7 |
| 1192. | 344.0 | 10.3 |
| 1247. | 341.0 | 8.9 |

RADIO SCNDE DATE 25/02/77 TIME 09:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (#10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | OTHV/DZ (#1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 871.6 | 345. | 7.3 | .000 | -5 | -7.3 | 2.5 | 284.0 | .000 |
| 199. | 850.0 | 337. | 9.6 | .116 | -3.7 | -11.2 | 1.9 | 282.6 | -7.131 |
| 274. | 842.0 | | | | -5.0 | -12.7 | 1.7 | 282.0 | -8.486 |
| 305. | 838.7 | 347. | 9.4 | -.019 | -5.2 | -12.8 | 1.7 | 282.1 | 3.390 |
| 609. | 806.4 | 347. | 10.5 | .036 | -7.3 | -14.4 | 1.5 | 283.0 | 3.042 |
| 914. | 775.4 | 351. | 10.7 | .007 | -9.5 | -15.9 | 1.4 | 283.8 | 2.625 |
| 1199. | 747.5 | | | | -11.5 | -17.3 | 1.3 | 284.6 | 2.790 |
| 1219. | 745.5 | 354. | 11.1 | .013 | -11.6 | -17.7 | 1.3 | 284.7 | 5.115 |
| 1523. | 716.4 | 2. | 12.2 | .036 | -13.0 | -22.5 | .9 | 286.3 | 5.426 |
| 1565. | 712.5 | | | | -13.2 | -23.2 | .8 | 286.6 | 5.203 |
| 1699. | 700.0 | 7. | 12.5 | .017 | -14.4 | -24.7 | .7 | 286.7 | .812 |
| 1828. | 688.0 | 10. | 12.4 | -.008 | -15.5 | -26.1 | .7 | 286.9 | 1.420 |
| 2132. | 660.9 | 15. | 12.0 | -.013 | -18.1 | -29.5 | .5 | 287.2 | 1.185 |
| 2170. | 657.5 | | | | -18.4 | -29.9 | .5 | 287.3 | 2.181 |
| 2437. | 634.1 | 17. | 12.0 | .000 | -20.2 | -34.4 | .3 | 288.2 | 3.424 |
| 2741. | 608.3 | 16. | 13.4 | .046 | -22.3 | -39.5 | .2 | 289.2 | 3.295 |
| 3045. | 583.6 | 18. | 15.6 | .072 | -24.4 | -44.5 | .1 | 290.2 | 3.242 |
| 3350. | 559.3 | 16. | 17.5 | .062 | -26.4 | -49.6 | .1 | 291.3 | 3.578 |
| 3395. | 556.5 | | | | -26.7 | -50.4 | .1 | 291.4 | 3.379 |
| 3655. | 536.6 | 14. | 18.7 | .039 | -28.9 | -51.2 | .1 | 291.9 | 1.622 |
| 3959. | 514.1 | 12. | 18.6 | -.003 | -31.3 | -52.2 | .1 | 292.6 | 2.282 |
| 4157. | 500.0 | 13. | 19.4 | .040 | -33.0 | -52.8 | .1 | 292.8 | 1.328 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| | | |
|----------|----------|-------|
| DATE | TIME | PLACE |
| 25/02/77 | 11:00:00 | DPGWV |

| | | |
|------|----------|------------|
| HGT. | WIND DIR | WIND SPEED |
| (M) | (DEG) | (M/S) |

| | | |
|------|-------|-----|
| 76. | 325.0 | 6.5 |
| 146. | 330.0 | 5.7 |
| 204. | 336.0 | 5.4 |
| 259. | 342.0 | 5.4 |
| 314. | 344.0 | 5.4 |
| 369. | 343.0 | 6.5 |
| 424. | 344.0 | 7.2 |

| RADIOSONDE DATE 25/02/77 TIME 12:00:00 LOCATION DPGHV | | | | | | | | | |
|---|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | OTHV/DZ (*1000) |
| 0. | 871.6 | 340. | 6.1 | .000 | 2.8 | -7.6 | 2.5 | 287.5 | .000 |
| 89. | 862.0 | | | | -2 | -16.1 | 1.3 | 285.0 | -28.09 |
| 196. | 850.5 | | | | -1.5 | -14.5 | 1.5 | 284.8 | -2.161 |
| 201. | 850.0 | 329. | 10.5 | .219 | -1.6 | -14.5 | 1.5 | 284.7 | -20.000 |
| 305. | 838.8 | 338. | 9.7 | -.077 | -2.5 | -14.7 | 1.5 | 284.9 | 1.290 |
| 609. | 806.9 | 337. | 8.7 | -.033 | -5.4 | -15.2 | 1.4 | 285.0 | .295 |
| 914. | 776.2 | 341. | 8.2 | -.016 | -8.2 | -15.8 | 1.4 | 285.1 | .534 |
| 1008. | 767.0 | | | | -9.1 | -15.9 | 1.4 | 285.1 | .032 |
| 1219. | 746.0 | 346. | 10.3 | .069 | -10.5 | -19.4 | 1.1 | 285.8 | 3.269 |
| 1523. | 716.9 | 351. | 10.6 | .010 | -12.7 | -24.4 | .7 | 286.6 | 2.586 |
| 1705. | 700.0 | 355. | 9.4 | -.066 | -14.0 | -27.4 | .6 | 287.1 | 2.710 |
| 1828. | 688.8 | 359. | 8.6 | -.065 | -14.8 | -29.4 | .5 | 287.5 | 3.425 |
| 2057. | 668.5 | | | | -16.4 | -33.2 | .3 | 288.2 | 2.840 |
| 2132. | 661.7 | 3. | 8.9 | .010 | -17.0 | -33.9 | .3 | 288.3 | 2.201 |
| 2437. | 635.0 | 7. | 10.3 | .046 | -19.2 | -36.9 | .2 | 289.2 | 2.944 |
| 2741. | 609.4 | 8. | 12.1 | .059 | -21.4 | -40.0 | .2 | 290.1 | 2.888 |
| 3046. | 584.8 | 8. | 12.7 | .020 | -23.6 | -43.0 | .1 | 291.0 | 2.838 |
| 3238. | 569.8 | | | | -25.0 | -44.9 | .1 | 291.5 | 2.717 |
| 3350. | 560.9 | 7. | 13.2 | .016 | -26.0 | -45.5 | .1 | 291.6 | 1.200 |
| 3655. | 537.4 | 2. | 13.5 | .010 | -28.5 | -47.2 | .1 | 292.2 | 1.976 |
| 3959. | 514.8 | 353. | 15.1 | .053 | -31.0 | -48.9 | .1 | 292.8 | 1.933 |
| 4167. | 500.0 | 351. | 16.5 | .067 | -32.8 | -50.0 | .1 | 293.1 | 1.235 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 25/02/77 | 14:00:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 346.0 | 5.6 |
| 146. | 348.0 | 4.5 |
| 204. | 358.0 | 4.9 |
| 259. | 357.0 | 5.4 |
| 314. | 357.0 | 6.3 |
| 369. | 359.0 | 7.2 |
| 424. | 2.0 | 6.0 |
| 479. | 357.0 | 5.7 |
| 533. | 350.0 | 6.3 |
| 588. | 349.0 | 6.9 |
| 643. | 349.0 | 8.0 |
| 698. | 347.0 | 9.4 |
| 753. | 345.0 | 9.8 |
| 808. | 345.0 | 11.6 |
| 863. | 344.0 | 12.9 |
| 918. | 342.0 | 10.0 |
| 972. | 338.0 | 7.3 |
| 1027. | 338.0 | 5.8 |
| 1082. | 334.0 | 4.7 |
| 1137. | 334.0 | 5.2 |
| 1192. | 328.0 | 4.5 |
| 1247. | 331.0 | 4.1 |
| 1302. | 341.0 | 5.3 |
| 1356. | 341.0 | 5.4 |
| 1411. | 341.0 | 5.4 |
| 1466. | 346.0 | 6.0 |
| 1521. | 349.0 | 5.8 |
| 1576. | 349.0 | 5.8 |
| 1631. | 349.0 | 6.7 |
| 1686. | 349.0 | 7.2 |
| 1741. | 349.0 | 7.2 |
| 1796. | 349.0 | 6.7 |

RADIOSONDE DATE 25/02/77 TIME 15:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 871.6 | 345. | 7.3 | .000 | 3.2 | -10.4 | 2.0 | 287.8 | .000 |
| 202. | 850.0 | 344. | 7.5 | .010 | .4 | -15.3 | 1.4 | 286.8 | -4.812 |
| 295. | 840.2 | | | | -.9 | -17.6 | 1.1 | 286.4 | -4.885 |
| 305. | 839.2 | 360. | 6.8 | -.068 | -.9 | -17.6 | 1.1 | 286.5 | 9.779 |
| 542. | 814.5 | | | | -3.2 | -17.1 | 1.2 | 286.5 | .136 |
| 609. | 807.6 | 354. | 7.9 | .036 | -3.8 | -16.7 | 1.3 | 286.6 | 1.028 |
| 664. | 802.0 | | | | -4.2 | -16.4 | 1.3 | 286.7 | 2.759 |
| 914. | 776.2 | 346. | 9.3 | .046 | -6.8 | -17.0 | 1.3 | 286.6 | -.432 |
| 1219. | 746.5 | 340. | 11.3 | .066 | -9.8 | -17.6 | 1.3 | 286.6 | -.167 |
| 1523. | 717.6 | 337. | 12.0 | .023 | -12.9 | -18.2 | 1.3 | 286.4 | -.525 |
| 1683. | 703.0 | | | | -14.5 | -18.5 | 1.3 | 286.3 | -.522 |
| 1715. | 700.0 | 336. | 11.7 | -.016 | -14.9 | -18.5 | 1.3 | 286.2 | -2.874 |
| 1828. | 689.6 | 337. | 11.0 | -.062 | -16.2 | -18.3 | 1.3 | 286.0 | -1.874 |
| 1867. | 686.0 | | | | -16.7 | -18.2 | 1.3 | 285.9 | -3.224 |
| 2073. | 667.5 | | | | -17.6 | -26.4 | .7 | 287.0 | 5.419 |
| 2132. | 662.2 | 343. | 9.5 | -.049 | -17.0 | -33.2 | .3 | 288.3 | 21.625 |
| 2135. | 662.0 | | | | -16.9 | -33.4 | .3 | 288.4 | 45.428 |
| 2437. | 635.8 | 350. | 10.3 | .026 | -19.2 | -35.5 | .3 | 289.1 | 2.392 |
| 2440. | 635.5 | | | | -19.2 | -35.5 | .3 | 289.2 | 13.020 |
| 2741. | 610.1 | 345. | 10.9 | .020 | -21.2 | -36.5 | .3 | 290.3 | 3.608 |
| 2835. | 602.5 | | | | -21.8 | -36.7 | .3 | 290.6 | 3.706 |
| 3046. | 585.2 | 341. | 12.1 | .039 | -23.6 | -38.3 | .2 | 290.9 | 1.550 |
| 3350. | 561.2 | 343. | 12.3 | .007 | -26.2 | -40.6 | .2 | 291.4 | 1.415 |
| 3590. | 543.0 | | | | -28.2 | -42.3 | .2 | 291.7 | 1.556 |
| 3655. | 538.1 | 348. | 13.3 | .033 | -28.5 | -42.4 | .2 | 292.1 | 6.139 |
| 3845. | 524.0 | | | | -29.4 | -42.7 | .2 | 293.3 | 6.021 |
| 3959. | 515.7 | 356. | 16.3 | .099 | -29.6 | -42.7 | .2 | 294.4 | 9.658 |
| 4116. | 504.5 | | | | -29.8 | -42.6 | .2 | 296.0 | 10.269 |
| 4180. | 500.0 | 360. | 17.5 | .054 | -30.2 | -43.2 | .2 | 296.3 | 4.219 |

* VIRTUAL POTENTIAL TEMPERATURE

RADIOSONDE DATE 28/02/77 TIME 08:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 873.6 | 90. | 2.1 | .000 | -2.9 | -7.4 | 2.5 | 281.3 | .000 |
| 39. | 869.3 | | | | -.2 | -10.3 | 2.0 | 284.5 | 80.128 |
| 220. | 850.0 | 183. | 8.3 | .282 | .9 | -11.2 | 1.9 | 287.4 | 16.405 |
| 305. | 841.0 | 172. | 8.3 | .000 | 1.4 | -11.7 | 1.9 | 288.8 | 16.383 |
| 331. | 838.3 | | | | 1.5 | -11.8 | 1.8 | 289.2 | 14.210 |
| 609. | 809.7 | 184. | 6.7 | -.053 | .6 | -13.5 | 1.7 | 291.1 | 6.821 |
| 914. | 779.5 | 196. | 4.9 | -.059 | -.5 | -15.4 | 1.5 | 293.1 | 6.446 |
| 968. | 774.3 | | | | -.7 | -15.7 | 1.4 | 293.4 | 6.322 |
| 1219. | 750.1 | 226. | 4.1 | -.026 | -2.6 | -16.7 | 1.4 | 294.0 | 2.385 |
| 1523. | 721.8 | 257. | 5.2 | .036 | -5.0 | -17.9 | 1.3 | 294.6 | 1.973 |
| 1678. | 707.8 | | | | -6.3 | -18.5 | 1.2 | 294.8 | 1.364 |
| 1764. | 700.0 | 269. | 6.4 | .050 | -6.5 | -21.0 | 1.0 | 295.5 | 7.818 |
| 1878. | 694.3 | 271. | 6.5 | .016 | -6.7 | -22.8 | .9 | 295.9 | 6.936 |
| 1885. | 689.3 | | | | -6.8 | -24.4 | .8 | 296.4 | 8.437 |
| 2132. | 667.5 | 278. | 7.3 | .026 | -8.9 | -24.1 | .8 | 296.8 | 1.566 |
| 2437. | 641.6 | 280. | 8.0 | .023 | -11.6 | -23.7 | .9 | 297.1 | 1.059 |
| 2713. | 619.0 | | | | -14.0 | -23.3 | .9 | 297.4 | 1.160 |
| 2741. | 616.7 | 279. | 8.7 | .023 | -13.8 | -31.1 | .5 | 297.9 | 16.395 |
| 2864. | 606.8 | | | | -12.8 | -65.2 | .0 | 300.3 | 19.952 |
| 3046. | 592.5 | 276. | 8.8 | .003 | -13.7 | -64.3 | .0 | 301.4 | 5.552 |
| 3350. | 569.1 | 270. | 9.2 | .013 | -15.3 | -62.8 | .0 | 303.0 | 5.308 |
| 3496. | 558.3 | | | | -16.0 | -62.1 | .0 | 303.8 | 5.740 |
| 3655. | 546.5 | 267. | 10.0 | .026 | -17.2 | -56.2 | .0 | 304.2 | 2.760 |
| 3959. | 524.6 | 271. | 11.2 | .039 | -19.6 | -44.9 | .1 | 305.0 | 2.339 |
| 4263. | 503.5 | 281. | 13.0 | .059 | -21.9 | -33.6 | .4 | 305.8 | 2.830 |
| 4315. | 500.0 | 281. | 12.4 | -.115 | -22.3 | -31.7 | .5 | 306.0 | 2.698 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 28/02/77 | 09:00:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 145.0 | 15.0 |
| 146. | 148.0 | 11.7 |
| 204. | 153.0 | 10.0 |
| 259. | 156.0 | 6.5 |
| 314. | 164.0 | 5.4 |
| 369. | 170.0 | 5.5 |
| 424. | 172.0 | 5.1 |
| 479. | 176.0 | 5.4 |
| 533. | 186.0 | 6.6 |
| 588. | 186.0 | 8.0 |
| 643. | 182.0 | 7.2 |
| 698. | 183.0 | 6.3 |
| 753. | 182.0 | 5.8 |
| 808. | 182.0 | 4.7 |
| 863. | 183.0 | 3.6 |
| 918. | 184.0 | 3.3 |
| 972. | 188.0 | 3.3 |
| 1027. | 204.0 | 3.6 |
| 1082. | 217.0 | 3.6 |
| 1137. | 226.0 | 4.5 |
| 1192. | 226.0 | 6.3 |
| 1247. | 231.0 | 6.3 |
| 1302. | 234.0 | 5.5 |
| 1356. | 241.0 | 5.3 |
| 1411. | 249.0 | 5.4 |
| 1466. | 249.0 | 5.4 |
| 1521. | 249.0 | 5.4 |
| 1576. | 249.0 | 5.7 |
| 1631. | 251.0 | 5.8 |
| 1686. | 251.0 | 5.9 |
| 1741. | 256.0 | 6.3 |
| 1796. | 265.0 | 6.4 |
| 1851. | 270.0 | 6.7 |
| 1905. | 280.0 | 6.5 |
| 1960. | 279.0 | 7.2 |
| 2015. | 272.0 | 8.0 |

RADIOSONDE DATE 28/02/77 TIME 11:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV# (DEG K) | DTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 871.5 | 140. | 7.7 | .000 | 7.7 | -7.9 | 2.4 | 292.6 | .000 |
| 118. | 859.0 | | | | 4.9 | -9.5 | 2.2 | 290.8 | 15.250 |
| 204. | 850.0 | 170. | 8.8 | .054 | 4.1 | -10.3 | 2.0 | 290.8 | .213 |
| 305. | 839.5 | 159. | 8.9 | .010 | 3.2 | -11.3 | 1.9 | 290.9 | .639 |
| 529. | 816.5 | | | | 1.1 | -13.4 | 1.7 | 290.9 | .210 |
| 609. | 808.4 | 173. | 9.8 | .030 | 1.3 | -13.5 | 1.7 | 292.0 | 13.050 |
| 719. | 797.5 | | | | 1.6 | -13.7 | 1.7 | 293.4 | 13.230 |
| 914. | 778.3 | 177. | 8.9 | -.030 | .5 | -14.7 | 1.6 | 294.3 | 4.372 |
| 1065. | 763.8 | | | | -.4 | -15.5 | 1.5 | 294.9 | 3.980 |
| 1219. | 749.1 | 187. | 6.0 | -.095 | -1.6 | -16.0 | 1.5 | 295.2 | 2.162 |
| 1523. | 720.6 | 200. | 6.3 | .010 | -4.0 | -17.0 | 1.4 | 295.9 | 2.116 |
| 1752. | 700.0 | 208. | 6.4 | .004 | -5.7 | -17.8 | 1.3 | 296.4 | 2.492 |
| 1828. | 693.3 | 211. | 6.3 | -.013 | -6.3 | -18.0 | 1.3 | 296.6 | 1.946 |
| 2132. | 666.9 | 237. | 6.5 | .007 | -8.7 | -19.0 | 1.3 | 297.2 | 1.984 |
| 2165. | 664.2 | | | | -8.9 | -19.1 | 1.3 | 297.3 | 3.604 |
| 2437. | 641.1 | 256. | 8.4 | .062 | -11.0 | -21.3 | 1.1 | 297.9 | 2.225 |
| 2596. | 628.0 | | | | -12.3 | -22.5 | 1.0 | 298.2 | 1.648 |
| 2741. | 616.2 | 260. | 10.8 | .079 | -11.5 | -30.4 | .5 | 300.6 | 16.888 |
| 2781. | 613.0 | | | | -11.2 | -32.5 | .4 | 301.4 | 19.426 |
| 3046. | 591.9 | 258. | 12.0 | .039 | -13.4 | -31.4 | .5 | 301.9 | 1.845 |
| 3350. | 568.6 | 258. | 12.4 | .013 | -15.9 | -30.2 | .5 | 302.4 | 1.851 |
| 3643. | 547.0 | | | | -18.3 | -29.0 | .6 | 303.0 | 1.816 |
| 3655. | 546.2 | 254. | 13.1 | .023 | -18.4 | -29.2 | .6 | 303.0 | .493 |
| 3959. | 524.1 | 251. | 13.9 | .026 | -20.6 | -34.0 | .4 | 303.9 | 3.004 |
| 4263. | 503.0 | 250. | 15.0 | .036 | -22.8 | -38.8 | .3 | 304.8 | 2.918 |
| 4307. | 500.0 | 250. | 14.9 | -.023 | -23.2 | -39.5 | .2 | 304.8 | .704 |

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 28/02/77 | 12:00:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 153.0 | 6.3 |
| 146. | 170.0 | 2.6 |
| 204. | 163.0 | 3.8 |
| 259. | 172.0 | 4.2 |
| 314. | 185.0 | 4.7 |
| 369. | 187.0 | 5.4 |
| 424. | 180.0 | 6.5 |
| 479. | 176.0 | 6.8 |
| 533. | 180.0 | 6.7 |
| 588. | 176.0 | 7.2 |
| 643. | 178.0 | 7.3 |
| 698. | 182.0 | 7.2 |
| 753. | 189.0 | 7.2 |
| 808. | 193.0 | 7.0 |
| 863. | 195.0 | 6.0 |
| 918. | 197.0 | 5.7 |
| 972. | 200.0 | 5.5 |
| 1027. | 208.0 | 7.0 |
| 1082. | 216.0 | 6.3 |
| 1137. | 220.0 | 5.8 |
| 1192. | 226.0 | 4.9 |
| 1247. | 225.0 | 4.5 |
| 1302. | 223.0 | 4.6 |
| 1356. | 223.0 | 4.5 |
| 1411. | 219.0 | 5.4 |
| 1466. | 225.0 | 4.5 |
| 1521. | 241.0 | 3.4 |
| 1576. | 241.0 | 4.5 |
| 1631. | 245.0 | 5.2 |
| 1686. | 250.0 | 5.4 |
| 1741. | 243.0 | 6.3 |
| 1796. | 249.0 | 6.3 |
| 1851. | 261.0 | 6.3 |
| 1905. | 253.0 | 7.6 |
| 1960. | 253.0 | 8.0 |
| 2015. | 255.0 | 7.2 |

RADIOSONDE DATE 28/02/77 TIME 14:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 868.4 | 155. | 4.1 | .000 | 10.0 | -6.3 | 2.7 | 295.3 | .000 |
| 63. | 861.8 | | | | 8.0 | -9.9 | 2.1 | 293.8 | -23.81 |
| 176. | 850.0 | 183. | 5.6 | .085 | 6.9 | -10.1 | 2.1 | 293.8 | .053 |
| 305. | 836.7 | 166. | 5.4 | -.016 | 5.7 | -10.3 | 2.1 | 293.8 | .493 |
| 582. | 808.8 | | | | 3.0 | -10.9 | 2.1 | 293.8 | -.051 |
| 609. | 806.0 | 185. | 5.0 | -.013 | 2.8 | -11.0 | 2.0 | 293.9 | 2.848 |
| 914. | 776.1 | 205. | 7.7 | .089 | .6 | -13.0 | 1.8 | 294.7 | 2.569 |
| 1006. | 767.3 | | | | -.1 | -13.6 | 1.7 | 294.9 | 2.116 |
| 1106. | 757.8 | | | | .1 | -14.6 | 1.6 | 296.1 | 12.480 |
| 1219. | 747.2 | 216. | 8.2 | .016 | -.5 | -15.3 | 1.6 | 296.6 | 4.690 |
| 1314. | 738.3 | | | | -1.0 | -16.0 | 1.5 | 297.1 | 4.839 |
| 1523. | 719.0 | 221. | 7.6 | -.020 | -2.7 | -16.7 | 1.4 | 297.5 | 1.822 |
| 1735. | 700.0 | 227. | 7.2 | -.019 | -4.4 | -17.4 | 1.4 | 297.9 | 1.862 |
| 1828. | 691.8 | 230. | 7.1 | -.011 | -5.2 | -17.8 | 1.4 | 298.0 | 1.187 |
| 1966. | 679.8 | | | | -6.3 | -18.2 | 1.3 | 298.2 | 1.395 |
| 2132. | 665.3 | 242. | 6.4 | -.023 | -7.8 | -17.9 | 1.4 | 298.4 | 1.022 |
| 2437. | 639.5 | 248. | 7.0 | .020 | -10.5 | -17.3 | 1.5 | 298.8 | 1.141 |
| 2741. | 614.8 | 251. | 7.9 | .030 | -13.2 | -16.7 | 1.7 | 299.1 | 1.004 |
| 2861. | 605.3 | | | | -14.3 | -16.5 | 1.7 | 299.1 | .616 |
| 3046. | 590.6 | 260. | 9.5 | .052 | -15.6 | -17.1 | 1.7 | 299.7 | 3.188 |
| 3297. | 571.3 | | | | -17.5 | -17.9 | 1.6 | 300.4 | 2.466 |
| 3350. | 567.2 | 260. | 12.9 | .112 | -17.8 | -18.3 | 1.6 | 300.6 | 4.872 |
| 3509. | 555.3 | | | | -18.7 | -19.4 | 1.5 | 301.4 | 4.666 |
| 3655. | 544.5 | 251. | 16.9 | .131 | -19.7 | -20.8 | 1.3 | 301.8 | 3.289 |
| 3959. | 522.6 | 249. | 19.0 | .069 | -21.6 | -23.8 | 1.1 | 303.1 | 4.032 |
| 4092. | 513.3 | | | | -22.4 | -25.1 | 1.0 | 303.6 | 4.308 |
| 4263. | 501.4 | 250. | 19.0 | .000 | -23.7 | -26.6 | .9 | 304.1 | 2.572 |
| 4284. | 500.0 | 250. | 19.0 | .000 | -23.8 | -26.8 | .8 | 304.2 | 5.656 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 28/02/77 | 15:00:00 | OPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 150.0 | 7.4 |
| 146. | 143.0 | 5.7 |
| 204. | 148.0 | 4.6 |
| 259. | 155.0 | 4.1 |
| 314. | 158.0 | 3.7 |
| 369. | 156.0 | 4.0 |
| 424. | 150.0 | 4.0 |
| 479. | 165.0 | 3.7 |
| 533. | 175.0 | 4.0 |
| 588. | 185.0 | 5.2 |
| 643. | 189.0 | 6.3 |
| 698. | 194.0 | 7.2 |
| 753. | 199.0 | 7.6 |
| 808. | 206.0 | 6.7 |
| 863. | 215.0 | 5.5 |
| 918. | 215.0 | 6.3 |
| 972. | 215.0 | 6.5 |
| 1027. | 230.0 | 5.4 |
| 1082. | 249.0 | 4.5 |
| 1137. | 251.0 | 4.5 |

RADIOSONDE DATE 28/02/77 TIME 17:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DI/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 864.0 | 130. | 6.7 | .000 | -10.5 | -8.2 | 2.4 | 274.3 | .000 |
| 134. | 850.0 | 162. | 9.1 | .179 | 9.3 | -9.2 | 2.2 | 296.3 | 164.179 |
| 305. | 832.4 | 152. | 10.0 | .053 | 7.7 | -10.6 | 2.0 | 296.4 | .322 |
| 609. | 802.0 | 167. | 11.1 | .036 | 4.9 | -13.0 | 1.7 | 296.5 | .430 |
| 914. | 772.7 | 190. | 10.0 | -.036 | 2.1 | -15.5 | 1.5 | 296.6 | .348 |
| 956. | 768.8 | | | | 1.7 | -15.8 | 1.4 | 296.6 | -.176 |
| 1219. | 743.9 | 209. | 10.0 | .000 | -.3 | -16.9 | 1.4 | 297.2 | 2.328 |
| 1523. | 716.1 | 217. | 9.7 | -.010 | -2.7 | -18.3 | 1.3 | 297.8 | 1.951 |
| 1538. | 714.8 | | | | -2.8 | -18.3 | 1.3 | 297.8 | 3.003 |
| 1703. | 700.0 | 221. | 9.3 | -.022 | -4.2 | -18.2 | 1.3 | 298.1 | 1.472 |
| 1828. | 688.9 | 222. | 9.0 | -.024 | -5.3 | -18.1 | 1.3 | 298.2 | 1.176 |
| 1968. | 676.8 | | | | -6.5 | -18.0 | 1.4 | 298.4 | 1.278 |
| 2132. | 662.4 | 222. | 7.6 | -.046 | -7.9 | -18.3 | 1.4 | 298.7 | 1.608 |
| 2437. | 636.7 | 223. | 7.5 | -.003 | -10.5 | -18.7 | 1.4 | 299.1 | 1.442 |
| 2741. | 611.9 | 232. | 9.3 | .059 | -13.1 | -19.2 | 1.4 | 299.5 | 1.390 |
| 3046. | 588.1 | 241. | 11.9 | .085 | -15.7 | -19.7 | 1.4 | 299.9 | 1.273 |
| 3115. | 582.8 | | | | -16.2 | -19.8 | 1.4 | 300.1 | 2.807 |
| 3350. | 564.6 | 250. | 14.0 | .069 | -18.1 | -21.6 | 1.2 | 300.6 | 1.987 |
| 3655. | 541.8 | 257. | 14.2 | .007 | -20.4 | -24.0 | 1.0 | 301.4 | 2.580 |
| 3959. | 519.9 | 259. | 13.3 | -.030 | -22.8 | -26.4 | .8 | 302.0 | 2.144 |
| 4248. | 500.0 | 258. | 12.9 | -.014 | -25.0 | -28.7 | .7 | 302.7 | 2.357 |

* VIRTUAL POTENTIAL TEMPERATURE

RADIOSUNDE DATE 28/02/77 TIME 20:00:00 LOCATION DPGWV

| Z (M) | PRESS (MR) | WIND DIR (DEG) | U (M/S) | DU/DZ (#10) | TEMP (DEG C) | DEWPT (DEG C) | MP (GM/KG) | THV* (DEG K) | DTHV/DZ (#1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 861.5 | 100. | 7.7 | .000 | 5.0 | -8.8 | 2.3 | 290.7 | .000 |
| 19. | 859.5 | | | | 7.7 | -9.9 | 2.1 | 293.7 | 157.895 |
| 111. | 850.0 | 177. | 12.2 | .405 | 8.6 | -11.1 | 1.9 | 295.5 | 20.091 |
| 130. | 848.0 | | | | 8.8 | -11.4 | 1.9 | 295.9 | 21.137 |
| 305. | 830.3 | 169. | 12.9 | .036 | 8.3 | -13.8 | 1.6 | 297.1 | 6.904 |
| 349. | 825.8 | | | | 8.1 | -14.4 | 1.5 | 297.4 | 5.418 |
| 609. | 800.1 | 179. | 14.8 | .062 | 6.2 | -12.8 | 1.8 | 298.1 | 2.779 |
| 653. | 795.8 | | | | 5.9 | -12.5 | 1.8 | 298.2 | 3.385 |
| 914. | 770.4 | 186. | 13.9 | -.030 | 3.4 | -13.8 | 1.7 | 298.3 | .227 |
| 1219. | 741.7 | | | | .5 | -15.3 | 1.6 | 298.4 | .226 |
| 1523. | 714.1 | 189. | 13.8 | -.002 | -2.4 | -16.7 | 1.4 | 298.4 | .117 |
| 1683. | 700.0 | 193. | 13.9 | .006 | -3.9 | -17.5 | 1.4 | 298.4 | .200 |
| 1726. | 696.3 | | | | -4.3 | -17.7 | 1.4 | 298.4 | .134 |
| 1828. | 687.3 | 199. | 14.2 | .021 | -5.2 | -18.8 | 1.3 | 298.5 | .887 |
| 2132. | 661.0 | 206. | 14.2 | .000 | -7.7 | -21.8 | 1.0 | 299.0 | 1.605 |
| 2326. | 644.8 | | | | -9.3 | -23.8 | .9 | 299.3 | 1.487 |
| 2437. | 635.5 | 212. | 11.9 | -.075 | -10.2 | -23.5 | .9 | 299.5 | 2.052 |
| 2741. | 610.7 | 222. | 10.6 | -.043 | -12.7 | -22.6 | 1.0 | 300.1 | 1.876 |
| 3001. | 590.3 | | | | -14.8 | -21.8 | 1.1 | 300.6 | 1.952 |
| 3046. | 586.8 | 226. | 10.2 | -.013 | -15.2 | -22.2 | 1.1 | 300.6 | .878 |
| 3350. | 563.5 | 227. | 11.2 | .033 | -17.9 | -24.8 | .9 | 300.9 | .939 |
| 3427. | 557.8 | | | | -18.6 | -25.5 | .9 | 301.0 | .520 |
| 3521. | 550.8 | | | | -18.6 | -31.1 | .5 | 302.0 | 10.914 |
| 3655. | 540.9 | 237. | 11.5 | .010 | -19.8 | -33.5 | .4 | 302.1 | .905 |
| 3950. | 519.0 | 241. | 12.3 | .026 | -22.5 | -38.9 | .2 | 302.4 | 1.001 |
| 4234. | 500.0 | 238. | 12.8 | .018 | -24.9 | -43.8 | .2 | 302.7 | 1.087 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 28/02/77 | 21:00:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 172.0 | 9.4 |
| 146. | 176.0 | 10.8 |
| 204. | 192.0 | 9.6 |
| 259. | 191.0 | 10.6 |
| 314. | 190.0 | 12.9 |
| 369. | 192.0 | 12.4 |
| 424. | 191.0 | 11.6 |
| 479. | 198.0 | 13.0 |
| 533. | 198.0 | 13.0 |
| 588. | 198.0 | 14.3 |
| 643. | 204.0 | 16.5 |
| 698. | 204.0 | 19.9 |
| 753. | 202.0 | 23.0 |
| 808. | 195.0 | 19.0 |
| 863. | 198.0 | 14.0 |
| 918. | 208.0 | 13.9 |
| 972. | 191.0 | 13.4 |
| 1027. | 203.0 | 13.4 |
| 1082. | 211.0 | 13.4 |
| 1137. | 197.0 | 13.4 |

RADIOSONDE DATE 28/02/77 TIME 23:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV# (DEG K) | DTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 859.6 | 180. | 3.1 | .000 | 2.8 | -10.1 | 2.1 | 288.5 | .000 |
| 85. | 850.7 | | | | 7.5 | -13.8 | 1.5 | 294.2 | 67.313 |
| 91. | 850.0 | 211. | 8.5 | .593 | 7.5 | -13.9 | 1.5 | 294.3 | 11.206 |
| 305. | 828.2 | 198. | 9.0 | .023 | 6.8 | -15.1 | 1.4 | 295.7 | 6.710 |
| 389. | 819.8 | | | | 6.6 | -15.6 | 1.4 | 296.4 | 7.662 |
| 609. | 797.9 | 205. | 11.7 | .089 | 4.5 | -16.5 | 1.3 | 296.4 | .229 |
| 688. | 790.3 | | | | 3.7 | -16.8 | 1.3 | 296.4 | -.603 |
| 914. | 768.5 | 210. | 12.2 | .016 | 2.1 | -17.5 | 1.3 | 297.0 | 2.862 |
| 974. | 762.8 | | | | 1.6 | -17.6 | 1.3 | 297.1 | 1.536 |
| 1219. | 739.8 | 213. | 11.0 | -.039 | -.1 | -18.5 | 1.2 | 297.9 | 3.054 |
| 1523. | 712.2 | 215. | 9.3 | -.056 | -2.2 | -19.6 | 1.1 | 298.8 | 3.055 |
| 1572. | 707.8 | | | | -2.5 | -19.8 | 1.1 | 299.0 | 4.007 |
| 1660. | 700.0 | 216. | 8.6 | -.051 | -3.1 | -20.5 | 1.1 | 299.3 | 3.117 |
| 1828. | 685.3 | 221. | 8.5 | -.006 | -4.2 | -21.8 | 1.0 | 299.8 | 3.443 |
| 1868. | 681.8 | | | | -4.5 | -22.2 | .9 | 299.9 | 2.480 |
| 2132. | 658.9 | 234. | 9.4 | .030 | -7.0 | -22.9 | .9 | 300.1 | .462 |
| 2437. | 633.5 | 239. | 10.5 | .036 | -9.8 | -23.8 | .9 | 300.2 | .635 |
| 2741. | 609.1 | 238. | 11.3 | .026 | -12.6 | -24.7 | .8 | 300.4 | .516 |
| 2784. | 605.8 | | | | -13.0 | -24.8 | .8 | 300.4 | .108 |
| 3046. | 585.1 | 237. | 12.9 | .052 | -15.3 | -28.4 | .6 | 300.7 | 1.069 |
| 3350. | 562.0 | 235. | 14.5 | .053 | -17.9 | -32.6 | .4 | 301.1 | 1.258 |
| 3420. | 556.8 | | | | -18.5 | -33.6 | .4 | 301.2 | 1.217 |
| 3655. | 539.3 | 232. | 15.5 | .033 | -20.7 | -35.1 | .4 | 301.3 | .551 |
| 3959. | 517.4 | 231. | 15.4 | -.003 | -23.6 | -38.9 | .2 | 301.4 | .238 |
| 4210. | 500.0 | 231. | 15.4 | .000 | -26.0 | -38.6 | .3 | 301.4 | .156 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 01/03/77 | 00:00:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 320.0 | 4.2 |
| 146. | 273.0 | 5.0 |
| 204. | 254.0 | 7.0 |
| 259. | 256.0 | 8.2 |
| 314. | 258.0 | 7.8 |
| 369. | 257.0 | 7.2 |
| 424. | 254.0 | 7.9 |
| 479. | 253.0 | 7.3 |
| 533. | 255.0 | 7.0 |
| 588. | 255.0 | 7.0 |
| 643. | 256.0 | 6.9 |
| 698. | 258.0 | 6.9 |
| 753. | 258.0 | 6.2 |
| 808. | 261.0 | 6.0 |
| 863. | 262.0 | 5.9 |
| 918. | 257.0 | 6.2 |
| 972. | 253.0 | 6.8 |
| 1027. | 250.0 | 6.1 |
| 1082. | 249.0 | 6.0 |
| 1137. | 247.0 | 5.8 |
| 1192. | 243.0 | 5.5 |
| 1247. | 243.0 | 6.0 |
| 1302. | 243.0 | 6.2 |
| 1356. | 242.0 | 6.1 |
| 1411. | 245.0 | 7.0 |
| 1466. | 249.0 | 9.2 |
| 1521. | 251.0 | 9.0 |
| 1576. | 249.0 | 8.0 |
| 1631. | 248.0 | 7.0 |

RADIOSONDE DATE 01/03/77 TIME 02:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | OTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 861.0 | 300. | 4.2 | .000 | .4 | -6.9 | 2.6 | 286.0 | .000 |
| 20. | 858.8 | | | | .5 | -6.8 | 2.7 | 286.3 | 15.936 |
| 103. | 850.0 | 313. | 13.6 | .913 | .3 | -6.9 | 2.7 | 286.9 | 7.662 |
| 305. | 828.9 | 320. | 13.6 | .000 | -.3 | -7.2 | 2.7 | 288.4 | 7.114 |
| 335. | 825.8 | | | | -.4 | -7.2 | 2.7 | 288.6 | 6.839 |
| 541. | 804.8 | | | | -.7 | -7.3 | 2.7 | 290.4 | 8.848 |
| 609. | 797.9 | 319. | 14.5 | .030 | -1.1 | -7.3 | 2.8 | 290.7 | 4.307 |
| 914. | 767.9 | | | | -2.9 | -7.2 | 2.9 | 292.0 | 4.205 |
| 967. | 762.8 | | | | -3.3 | -7.2 | 2.9 | 292.1 | 2.405 |
| 1219. | 738.9 | 310. | 6.3 | -.134 | -4.3 | -10.5 | 2.3 | 293.6 | 5.845 |
| 1268. | 734.3 | | | | -4.5 | -11.2 | 2.2 | 293.9 | 5.833 |
| 1523. | 710.7 | 278. | 3.9 | -.079 | -6.8 | -14.3 | 1.8 | 294.0 | .553 |
| 1642. | 700.0 | 256. | 3.9 | .000 | -7.9 | -15.7 | 1.6 | 294.0 | .238 |
| 1672. | 697.3 | | | | -8.1 | -16.1 | 1.6 | 294.1 | 3.161 |
| 1828. | 683.4 | 237. | 5.7 | .097 | -9.4 | -16.4 | 1.5 | 294.4 | 1.579 |
| 2132. | 656.8 | 225. | 8.6 | .095 | -11.8 | -16.9 | 1.5 | 295.0 | 2.144 |
| 2317. | 641.3 | | | | -13.2 | -17.2 | 1.5 | 295.5 | 2.327 |
| 2437. | 631.2 | 221. | 11.0 | .079 | -14.2 | -17.2 | 1.6 | 295.7 | 1.727 |
| 2741. | 606.3 | 221. | 13.2 | .072 | -16.4 | -16.9 | 1.7 | 296.6 | 2.965 |
| 2803. | 601.4 | | | | -16.9 | -16.9 | 1.7 | 296.7 | 1.817 |
| 3046. | 582.2 | 216. | 15.1 | .062 | -18.2 | -18.4 | 1.5 | 297.9 | 5.017 |
| 3174. | 572.3 | | | | -18.9 | -19.1 | 1.5 | 298.5 | 4.931 |
| 3350. | 558.7 | 211. | 16.3 | .039 | -20.5 | -21.1 | 1.3 | 298.7 | .749 |
| 3655. | 536.0 | 210. | 19.0 | .089 | -23.2 | -24.6 | 1.0 | 298.9 | .917 |
| 3959. | 514.0 | 207. | 20.6 | .053 | -25.9 | -28.0 | .7 | 299.2 | .970 |
| 4080. | 505.8 | | | | -26.9 | -29.4 | .7 | 299.4 | 1.232 |
| 4163. | 500.0 | 206. | 20.7 | .005 | -27.7 | -30.4 | .6 | 299.4 | .045 |

* VIRTUAL POTENTIAL TEMPERATURE

RADIOSONDE DATE 01/03/77 TIME 05:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DIJ/DZ (#10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTHV/DZ (#1000) |
|----------|---------------|-------------------|------------|-----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 861.3 | 335. | 10.3 | .000 | -2.5 | -3.9 | 3.3 | 283.0 | .000 |
| 69. | 853.8 | | | | -2.9 | -3.2 | 3.5 | 283.4 | 4.724 |
| 105. | 850.0 | 347. | 11.0 | .067 | -3.1 | -3.3 | 3.5 | 283.5 | 4.164 |
| 305. | 828.8 | 354. | 11.0 | .000 | -3.9 | -4.2 | 3.4 | 284.7 | 5.920 |
| 556. | 802.8 | | | | -4.9 | -5.3 | 3.2 | 286.2 | 6.018 |
| 609. | 797.4 | 341. | 12.1 | .036 | -5.3 | -5.7 | 3.1 | 286.3 | 2.117 |
| 764. | 781.8 | | | | -6.5 | -6.8 | 2.9 | 286.6 | 1.923 |
| 914. | 766.9 | 331. | 12.6 | .016 | -7.4 | -7.8 | 2.8 | 287.2 | 3.866 |
| 1219. | 737.4 | 329. | 10.5 | -.069 | -9.2 | -9.8 | 2.5 | 288.4 | 3.996 |
| 1367. | 723.4 | | | | -10.1 | -10.7 | 2.3 | 289.0 | 3.882 |
| 1523. | 708.9 | 325. | 4.4 | -.201 | -10.5 | -11.1 | 2.3 | 290.2 | 7.895 |
| 1620. | 700.0 | 319. | 2.3 | -.216 | -10.8 | -11.4 | 2.3 | 290.9 | 7.353 |
| 1756. | 687.8 | | | | -11.1 | -11.7 | 2.3 | 292.1 | 8.306 |
| 1828. | 681.3 | 171. | 1.6 | -.034 | -11.6 | -12.2 | 2.2 | 292.3 | 3.100 |
| 2132. | 654.6 | 162. | 4.6 | .099 | -13.6 | -14.2 | 1.9 | 293.3 | 3.470 |
| 2437. | 628.9 | 174. | 6.5 | .062 | -15.6 | -16.2 | 1.7 | 294.4 | 3.449 |
| 2596. | 615.8 | | | | -16.6 | -17.3 | .0 | 294.7 | 2.016 |
| 2741. | 603.8 | 194. | 9.6 | .102 | -17.8 | -18.5 | 1.5 | 295.3 | 3.729 |
| 3046. | 579.4 | 207. | 13.4 | .125 | -20.2 | -21.2 | 1.2 | 295.9 | 2.130 |
| 3350. | 556.4 | 213. | 16.1 | .089 | -22.6 | -23.9 | 1.0 | 296.5 | 1.869 |
| 3655. | 533.5 | 214. | 18.0 | .062 | -25.1 | -26.5 | .8 | 297.0 | 1.835 |
| 3784. | 524.3 | | | | -26.1 | -27.7 | .7 | 297.3 | 2.053 |
| 3959. | 511.7 | 213. | 18.3 | .010 | -27.7 | -29.5 | .6 | 297.4 | .678 |
| 4125. | 500.0 | 211. | 18.5 | .012 | -29.2 | -31.1 | .6 | 297.6 | .785 |

* VIRTUAL POTENTIAL TEMPERATURE

RADIOSONDE DATE 01/03/77 TIME 08:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | V/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|---------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 861.1 | 280. | 4.2 | .000 | -2.5 | -5.5 | 2.9 | 283.0 | .000 |
| 77. | 852.8 | | | | -3.6 | -4.8 | 3.1 | 282.7 | -4.354 |
| 103. | 850.0 | 323. | 8.8 | .447 | -3.8 | -4.8 | 3.1 | 282.7 | 2.225 |
| 165. | 843.3 | | | | -4.4 | -5.0 | 3.1 | 282.7 | .088 |
| 305. | 828.4 | 331. | 8.6 | -.010 | -5.3 | -5.9 | 3.0 | 283.2 | 3.334 |
| 609. | 796.6 | 310. | 9.9 | .043 | -7.2 | -7.8 | 2.7 | 284.3 | 3.632 |
| 914. | 766.1 | 312. | 9.1 | -.026 | -9.2 | -9.7 | 2.4 | 285.3 | 3.219 |
| 1082. | 749.8 | | | | -10.3 | -10.8 | 2.2 | 285.8 | 3.198 |
| 1219. | 736.4 | 313. | 8.7 | -.013 | -11.1 | -11.8 | 2.1 | 286.4 | 4.233 |
| 1523. | 707.5 | 315. | 9.4 | .023 | -13.1 | -14.1 | 1.8 | 287.4 | 3.411 |
| 1605. | 700.0 | 315. | 9.4 | .000 | -13.6 | -14.7 | 1.7 | 287.7 | 3.793 |
| 1828. | 679.8 | 317. | 9.2 | -.009 | -15.0 | -16.4 | 1.6 | 288.6 | 3.687 |
| 2090. | 656.8 | | | | -16.7 | -18.3 | 1.4 | 289.5 | 3.446 |
| 2132. | 653.1 | 315. | 7.1 | -.069 | -17.0 | -18.6 | 1.3 | 289.6 | 2.955 |
| 2437. | 626.9 | 305. | 4.2 | -.095 | -18.9 | -20.7 | 1.2 | 290.8 | 3.955 |
| 2741. | 601.8 | 250. | 1.6 | -.086 | -20.9 | -22.8 | 1.0 | 291.9 | 3.540 |
| 2816. | 595.8 | | | | -21.4 | -23.3 | 1.0 | 292.1 | 3.351 |
| 3046. | 577.4 | 184. | 3.9 | .075 | -22.8 | -24.3 | .9 | 293.1 | 4.277 |
| 3221. | 563.8 | | | | -23.9 | -25.1 | .9 | 293.8 | 4.003 |
| 3350. | 553.8 | 192. | 7.9 | .132 | 24.8 | -26.4 | .8 | 353.0 | .775 |
| 3655. | 531.1 | 199. | 11.4 | .115 | -26.9 | -29.5 | .6 | 295.2 | 4.262 |
| 3775. | 522.3 | | | | -27.7 | -30.7 | .6 | 295.7 | 3.667 |
| 3959. | 509.0 | 199. | 13.2 | .059 | -29.3 | -32.8 | .5 | 295.9 | 1.257 |
| 4087. | 500.0 | 199. | 13.8 | .047 | -30.4 | -34.2 | .4 | 296.1 | 1.269 |

* VIRTUAL POTENTIAL TEMPERATURE

RADIOSONDE DATE 01/03/77 TIME 11:00:00 LOCATION DPGMV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | OTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 860.3 | 345. | 5.0 | .000 | -5 | -6.2 | 2.8 | 285.1 | .000 |
| 9. | 859.3 | | | | -2.0 | -8.1 | 2.4 | 283.6 | -166.667 |
| 93. | 850.3 | | | | -2.4 | -8.5 | 2.4 | 284.0 | 5.084 |
| 96. | 850.0 | 314. | 6.7 | .177 | -2.4 | -8.5 | 2.4 | 284.1 | 9.605 |
| 305. | 827.8 | 319. | 6.3 | -.019 | -4.0 | -10.4 | 2.1 | 284.5 | 2.005 |
| 391. | 818.8 | | | | -4.6 | -11.1 | 2.0 | 284.7 | 2.776 |
| 609. | 796.2 | 312. | 9.0 | .089 | -6.6 | -12.5 | 1.8 | 284.8 | .563 |
| 914. | 765.7 | 314. | 11.0 | .066 | -9.3 | -14.3 | 1.6 | 285.1 | .818 |
| 964. | 760.8 | | | | -9.7 | -14.6 | 1.6 | 285.2 | 1.715 |
| 1219. | 736.0 | 322. | 10.9 | -.003 | -11.5 | -16.0 | 1.5 | 285.9 | 2.848 |
| 1337. | 724.8 | | | | -12.3 | -16.7 | 1.4 | 286.3 | 3.115 |
| 1523. | 707.2 | 327. | 9.5 | -.046 | -13.6 | -17.6 | 1.3 | 286.8 | 3.067 |
| 1601. | 700.0 | 327. | 9.2 | -.038 | -14.2 | -18.0 | 1.3 | 287.0 | 2.181 |
| 1824. | 679.8 | | | | -15.8 | -19.1 | 1.2 | 287.6 | 2.739 |
| 1828. | 679.4 | 327. | 8.2 | -.044 | -15.9 | -19.2 | 1.2 | 287.5 | -25.000 |
| 2132. | 652.3 | 325. | 6.0 | -.072 | -17.9 | -21.9 | 1.0 | 288.6 | 3.511 |
| 2413. | 628.3 | | | | -19.7 | -24.4 | .8 | 289.6 | 3.643 |
| 2437. | 626.3 | 311. | 3.8 | -.072 | -19.9 | -24.6 | .8 | 289.7 | 1.386 |
| 2741. | 601.0 | 265. | 2.8 | -.033 | -22.0 | -26.9 | .7 | 290.7 | 3.234 |
| 2892. | 588.8 | | | | -23.0 | -28.1 | .6 | 291.2 | 3.543 |
| 3046. | 576.5 | 213. | 3.9 | .036 | -24.0 | -29.0 | .6 | 291.8 | 3.802 |
| 3350. | 552.8 | 193. | 7.0 | .102 | -26.1 | -30.9 | .5 | 292.8 | 3.360 |
| 3618. | 532.8 | | | | -27.8 | -32.6 | .5 | 293.8 | 3.731 |
| 3655. | 530.0 | 194. | 10.5 | .115 | -28.2 | -33.0 | .4 | 293.8 | 0.000 |
| 3959. | 507.9 | 192. | 12.4 | .062 | -30.9 | -36.7 | .3 | 294.1 | .989 |
| 4070. | 500.0 | 192. | 12.5 | .009 | -31.9 | -38.0 | .3 | 294.2 | .863 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 01/03/77 | 12:00:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 50.0 | 2.0 |
| 146. | 23.0 | 1.3 |
| 204. | 313.0 | 1.6 |
| 259. | 301.0 | 3.0 |
| 314. | 302.0 | 3.9 |
| 369. | 306.0 | 4.8 |
| 424. | 306.0 | 5.2 |
| 479. | 302.0 | 5.0 |
| 533. | 306.0 | 7.0 |
| 588. | 306.0 | 7.9 |
| 643. | 303.0 | 8.0 |
| 698. | 301.0 | 8.1 |
| 753. | 300.0 | 8.3 |
| 808. | 300.0 | 8.2 |
| 863. | 304.0 | 8.0 |
| 918. | 308.0 | 8.8 |
| 972. | 309.0 | 7.9 |
| 1027. | 313.0 | 7.0 |
| 1082. | 319.0 | 7.0 |
| 1137. | 322.0 | 6.8 |
| 1192. | 329.0 | 6.7 |
| 1247. | 336.0 | 6.2 |
| 1302. | 339.0 | 6.1 |
| 1356. | 342.0 | 5.5 |
| 1411. | 340.0 | 5.0 |
| 1466. | 335.0 | 4.8 |
| 1521. | 329.0 | 4.2 |
| 1576. | 324.0 | 4.0 |
| 1631. | 318.0 | 3.7 |
| 1686. | 310.0 | 4.0 |
| 1741. | 309.0 | 4.0 |
| 1796. | 298.0 | 3.3 |
| 1851. | 300.0 | 3.9 |
| 1905. | 304.0 | 4.0 |
| 1960. | 295.0 | 3.8 |
| 2015. | 286.0 | 4.0 |

RADIOSONDE DATE 01/03/77 TIME 14:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 868.6 | 310. | 3.0 | .000 | .8 | -6.7 | 2.7 | 285.7 | .000 |
| 119. | 855.8 | | | | -.7 | -6.9 | 2.7 | 285.3 | -2.988 |
| 173. | 850.0 | 343. | 5.8 | .162 | -1.2 | -7.1 | 2.6 | 285.4 | .497 |
| 305. | 836.0 | 6. | 4.7 | -.083 | -2.5 | -7.7 | 2.6 | 285.3 | -.193 |
| 518. | 813.8 | | | | -4.5 | -8.6 | 2.4 | 285.4 | .287 |
| 609. | 804.4 | 332. | 5.0 | .010 | -5.0 | -9.8 | 2.3 | 285.8 | 4.208 |
| 611. | 804.3 | | | | -5.0 | -9.8 | 2.3 | 285.8 | 5.102 |
| 818. | 783.3 | | | | -6.1 | -12.3 | 1.9 | 286.7 | 4.476 |
| 914. | 773.7 | 312. | 6.2 | .039 | -6.8 | -12.9 | 1.8 | 287.0 | 2.572 |
| 1219. | 744.0 | 313. | 6.4 | .007 | -9.3 | -14.8 | 1.6 | 287.4 | 1.546 |
| 1289. | 737.3 | | | | -9.8 | -15.2 | 1.6 | 287.6 | 2.739 |
| 1523. | 715.1 | 319. | 7.5 | .036 | -12.1 | -16.4 | 1.5 | 287.6 | -.114 |
| 1686. | 700.0 | 321. | 8.1 | .037 | -13.6 | -17.2 | 1.4 | 287.7 | .531 |
| 1782. | 691.3 | | | | -14.5 | -17.7 | 1.4 | 287.7 | .234 |
| 1828. | 687.1 | 321. | 8.1 | .000 | -14.9 | -18.1 | 1.3 | 287.8 | 1.077 |
| 2132. | 659.9 | 317. | 7.3 | -.026 | -17.1 | -20.5 | 1.1 | 288.6 | 2.723 |
| 2162. | 657.3 | | | | -17.3 | -20.7 | 1.1 | 288.7 | 3.256 |
| 2437. | 633.5 | 309. | 5.7 | -.052 | -19.5 | -22.0 | 1.0 | 289.2 | 1.956 |
| 2665. | 614.3 | | | | -21.4 | -23.0 | 1.0 | 289.6 | 1.584 |
| 2741. | 607.9 | 293. | 5.2 | -.016 | -22.0 | -24.3 | .9 | 289.7 | 2.094 |
| 3046. | 583.2 | 269. | 5.5 | .010 | -24.3 | -29.5 | .6 | 290.5 | 2.353 |
| 3152. | 574.8 | | | | -25.1 | -31.3 | .5 | 290.7 | 2.411 |
| 3350. | 559.1 | 247. | 7.3 | .059 | -26.7 | -32.9 | .4 | 291.1 | 2.078 |
| 3655. | 535.7 | 227. | 8.8 | .049 | -29.2 | -35.3 | .3 | 291.7 | 1.898 |
| 3959. | 513.4 | 217. | 11.2 | .079 | -31.6 | -37.7 | .3 | 292.4 | 2.147 |
| 4148. | 500.0 | 216. | 11.8 | .032 | -33.2 | -39.2 | .2 | 292.6 | 1.389 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| | | |
|----------|----------|-------|
| DATE | TIME | PLACE |
| 01/03/77 | 15:00:00 | DPGWV |

| | | |
|------|----------|------------|
| HGT. | WIND DIR | WIND SPEED |
| (M) | (DEG) | (M/S) |

| | | |
|------|-------|-----|
| 76. | 23.0 | 5.2 |
| 146. | 19.0 | 4.0 |
| 204. | 13.0 | 3.9 |
| 259. | 4.0 | 4.0 |
| 314. | 353.0 | 4.0 |
| 369. | 346.0 | 3.8 |
| 424. | 340.0 | 2.8 |

RADIO SCNDE DATE 01/03/77 TIME 17:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | OTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 858.6 | 350. | 2.6 | .000 | -1.8 | -6.2 | 2.8 | 283.9 | .000 |
| 80. | 850.0 | 304. | 8.8 | .775 | -2.5 | -5.4 | 3.0 | 284.1 | 1.500 |
| 176. | 839.8 | | | | -3.3 | -4.5 | 3.3 | 284.2 | 1.914 |
| 305. | 826.2 | 317. | 7.8 | -.044 | -4.3 | -5.1 | 3.2 | 284.5 | 1.983 |
| 453. | 810.8 | | | | -5.4 | -5.7 | 3.1 | 284.8 | 2.366 |
| 609. | 794.6 | 325. | 9.5 | .056 | -6.5 | -6.8 | 2.9 | 285.3 | 2.811 |
| 914. | 764.0 | 330. | 9.8 | .010 | -8.6 | -9.0 | 2.5 | 286.2 | 2.911 |
| 1219. | 734.6 | 326. | 10.5 | .023 | -10.7 | -11.2 | 2.2 | 287.0 | 2.874 |
| 1430. | 714.8 | | | | -12.1 | -12.7 | 2.0 | 287.7 | 3.195 |
| 1523. | 706.1 | 322. | 11.5 | .033 | -12.9 | -13.6 | 1.9 | 287.8 | 1.115 |
| 1590. | 700.0 | 322. | 12.0 | .075 | -13.4 | -14.2 | 1.8 | 288.0 | 2.203 |
| 1735. | 686.8 | | | | -14.5 | -15.7 | 1.6 | 288.3 | 2.166 |
| 1828. | 678.3 | 320. | 11.0 | -.042 | -15.2 | -16.4 | 1.6 | 288.5 | 2.502 |
| 2132. | 651.4 | 317. | 10.2 | -.026 | -17.5 | -18.8 | 1.3 | 289.2 | 2.351 |
| 2437. | 625.5 | 316. | 10.6 | .013 | -19.7 | -21.2 | 1.1 | 290.1 | 2.694 |
| 2451. | 624.3 | | | | -19.8 | -21.3 | 1.1 | 290.1 | 3.106 |
| 2741. | 600.1 | 314. | 10.2 | -.013 | -21.9 | -23.4 | 1.0 | 290.9 | 2.896 |
| 3046. | 575.7 | 310. | 10.0 | -.007 | -24.0 | -25.5 | .8 | 291.9 | 3.247 |
| 3303. | 555.8 | | | | -25.8 | -27.4 | .7 | 292.7 | 3.122 |
| 3350. | 552.2 | 308. | 10.1 | .003 | -26.2 | -27.9 | .7 | 292.8 | 1.388 |
| 3655. | 529.1 | 310. | 9.8 | -.010 | -29.0 | -31.0 | .5 | 293.0 | .697 |
| 3959. | 507.1 | 309. | 7.6 | -.072 | -31.7 | -34.1 | .4 | 293.3 | .917 |
| 4059. | 500.0 | 310. | 8.9 | .130 | -32.6 | -35.1 | .4 | 293.4 | .814 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 01/03/77 | 18:00:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 319.0 | 5.1 |
| 146. | 318.0 | 6.2 |
| 204. | 315.0 | 6.2 |
| 259. | 313.0 | 6.5 |
| 314. | 316.0 | 7.1 |
| 369. | 320.0 | 7.8 |
| 424. | 320.0 | 7.5 |
| 479. | 316.0 | 6.5 |
| 533. | 316.0 | 5.5 |
| 588. | 319.0 | 5.6 |
| 643. | 319.0 | 5.7 |
| 698. | 321.0 | 5.1 |
| 753. | 329.0 | 4.9 |
| 808. | 330.0 | 4.6 |
| 863. | 330.0 | 4.8 |
| 918. | 331.0 | 5.8 |
| 972. | 335.0 | 7.0 |
| 1027. | 339.0 | 7.5 |
| 1082. | 341.0 | 8.0 |
| 1137. | 342.0 | 8.0 |

| RADIOSONDE | | DATE 01/03/77 | TIME 20:00:00 | LOCATION | DPGW | | | | | |
|------------|---------------|-------------------|---------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|--|
| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTHV/DZ (*1000) | |
| 0. | 859.1 | 315. | 3.6 | .000 | -2.5 | -6.0 | 2.8 | 283.2 | .000 | |
| 17. | 857.3 | | | | -2.0 | -6.2 | 2.8 | 283.9 | 40.403 | |
| 85. | 850.0 | 307. | 9.9 | .741 | -2.2 | -6.4 | 2.8 | 284.3 | 7.087 | |
| 110. | 847.3 | | | | -2.3 | -6.4 | 2.8 | 284.5 | 6.214 | |
| 305. | 826.7 | 314. | 8.5 | -.064 | -4.1 | -7.2 | 2.7 | 284.6 | .452 | |
| 409. | 815.8 | | | | -5.1 | -7.6 | 2.6 | 284.6 | .119 | |
| 609. | 795.2 | 322. | 8.1 | -.013 | -6.7 | -8.6 | 2.5 | 284.9 | 1.773 | |
| 898. | 766.3 | | | | -9.0 | -10.0 | 2.3 | 285.5 | 1.786 | |
| 914. | 764.7 | 332. | 8.5 | .013 | -9.1 | -10.1 | 2.3 | 285.5 | 3.762 | |
| 1219. | 734.8 | 336. | 11.2 | .089 | -11.5 | -12.4 | 2.0 | 286.1 | 1.955 | |
| 1523. | 706.1 | 342. | 13.4 | .072 | -13.9 | -14.8 | 1.7 | 286.7 | 1.887 | |
| 1589. | 700.0 | 344. | 13.5 | .015 | -14.9 | -15.3 | 1.7 | 286.3 | -6.150 | |
| 1828. | 678.4 | 347. | 13.6 | .004 | -16.2 | -17.1 | 1.5 | 287.4 | 4.565 | |
| 1863. | 675.3 | | | | -16.5 | -17.3 | 1.5 | 287.4 | 1.073 | |
| 2132. | 651.4 | 343. | 11.8 | -.059 | -18.6 | -19.5 | 1.2 | 288.0 | 2.101 | |
| 2437. | 625.3 | 334. | 9.6 | -.072 | -21.0 | -22.0 | 1.0 | 288.6 | 1.984 | |
| 2455. | 623.8 | | | | -21.2 | -22.2 | 1.0 | 288.5 | -1.863 | |
| 2741. | 599.9 | 332. | 9.2 | -.013 | -22.9 | -28.5 | .6 | 289.7 | 4.189 | |
| 2941. | 583.8 | | | | -24.1 | -32.9 | .4 | 290.6 | 4.141 | |

* VIRTUAL POTENTIAL TEMPERATURE

RADIO SCNDE DATE 01/03/77 TIME 23:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | OTHV/DZ |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|---------|
| 0. | 858.5 | 300. | 5.4 | .000 | -2.0 | -3.0 | 3.6 | 283.9 | .000 |
| 25. | 855.8 | | | | -2.6 | -3.3 | 3.5 | 283.5 | -16.000 |
| 78. | 850.0 | 297. | 9.7 | .551 | -2.9 | -3.6 | 3.4 | 283.7 | 4.292 |
| 305. | 825.9 | 308. | 8.8 | -.040 | -4.3 | -5.1 | 3.2 | 284.5 | 3.582 |
| 609. | 794.5 | 319. | 9.3 | .016 | -6.3 | -7.1 | 2.8 | 285.5 | 3.197 |
| 878. | 767.8 | | | | -8.0 | -8.9 | 2.5 | 286.4 | 3.415 |
| 914. | 764.2 | 334. | 10.7 | .046 | -8.3 | -9.2 | 2.5 | 286.5 | 1.457 |
| 1186. | 737.8 | | | | -10.5 | -11.4 | 2.2 | 286.9 | 1.597 |
| 1219. | 734.7 | 339. | 14.2 | .115 | -10.8 | -11.7 | 2.1 | 286.9 | .307 |
| 1523. | 705.9 | 342. | 15.7 | .049 | -12.9 | -13.9 | 1.8 | 287.8 | 3.056 |
| 1587. | 700.0 | 342. | 15.8 | .016 | -13.3 | -14.4 | 1.8 | 288.1 | 3.717 |
| 1828. | 678.3 | 344. | 16.0 | .008 | -15.0 | -16.2 | 1.6 | 288.7 | 2.778 |
| 1935. | 668.8 | | | | -15.7 | -16.9 | 1.5 | 289.1 | 3.447 |
| 2132. | 651.2 | 346. | 14.5 | -.049 | -17.3 | -18.7 | 1.3 | 289.5 | 1.885 |
| 2437. | 625.0 | 353. | 11.9 | -.085 | -19.8 | -21.4 | 1.1 | 290.0 | 1.693 |
| 2741. | 599.8 | 359. | 9.9 | -.066 | -22.2 | -24.1 | .9 | 290.6 | 2.035 |
| 3046. | 575.6 | 354. | 9.5 | -.013 | -24.7 | -26.8 | .7 | 291.1 | 1.588 |
| 3108. | 570.8 | | | | -25.2 | -27.4 | .7 | 291.2 | 1.690 |
| 3350. | 551.8 | 347. | 9.4 | -.003 | -27.3 | -29.6 | .6 | 291.5 | 1.335 |
| 3655. | 528.7 | 342. | 9.3 | -.003 | -30.1 | -32.5 | .5 | 291.7 | .670 |
| 3959. | 506.6 | 340. | 9.3 | .000 | -32.8 | -35.4 | .4 | 292.0 | .941 |
| 4053. | 500.0 | 340. | 9.4 | .011 | -33.6 | -36.3 | .3 | 292.1 | 1.243 |

* VIRTUAL POTENTIAL TEMPERATURE

RADIO SCNDE DATE 02/03/77 TIME 02:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTMV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 858.2 | 280. | 7.2 | .000 | -2.8 | -3.3 | 3.5 | 283.0 | .000 |
| 76. | 850.0 | 305. | 13.1 | .776 | -3.3 | -3.8 | 3.4 | 283.3 | 3.115 |
| 111. | 846.3 | | | | -3.5 | -4.1 | 3.3 | 283.4 | 3.795 |
| 305. | 825.7 | 317. | 11.6 | -.066 | -4.7 | -5.3 | 3.1 | 284.1 | 3.594 |
| 526. | 802.8 | | | | -6.1 | -6.8 | 2.9 | 284.9 | 3.420 |
| 609. | 794.3 | 325. | 14.4 | .092 | -6.7 | -7.3 | 2.8 | 285.1 | 2.564 |
| 914. | 763.7 | 332. | 17.7 | .108 | -8.9 | -9.5 | 2.4 | 285.9 | 2.559 |
| 1047. | 750.8 | | | | -9.8 | -10.4 | 2.3 | 286.3 | 2.973 |
| 1219. | 734.1 | 339. | 19.7 | .066 | -10.9 | -11.6 | 2.1 | 286.9 | 3.579 |
| 1523. | 705.3 | 346. | 19.4 | -.010 | -12.9 | -13.7 | 1.9 | 287.9 | 3.433 |
| 1581. | 700.0 | 348. | 19.1 | -.052 | -13.3 | -14.1 | 1.8 | 288.1 | 2.932 |
| 1828. | 677.7 | 353. | 15.4 | -.150 | -15.0 | -15.8 | 1.6 | 288.8 | 3.014 |
| 2101. | 653.8 | | | | -16.8 | -17.7 | 1.4 | 289.7 | 3.343 |
| 2132. | 651.1 | 359. | 10.3 | -.168 | -17.0 | -17.9 | 1.4 | 289.9 | 3.662 |
| 2437. | 624.9 | 1. | 9.5 | -.026 | -19.5 | -20.6 | 1.2 | 290.4 | 1.700 |
| 2741. | 599.8 | 3. | 10.5 | .033 | -22.0 | -23.3 | 1.0 | 290.9 | 1.617 |
| 2866. | 589.8 | | | | -23.0 | -24.3 | .9 | 291.1 | 1.810 |
| 3046. | 574.4 | 359. | 9.6 | -.030 | -24.6 | -26.5 | .8 | 291.4 | 1.719 |
| 3285. | 556.8 | | | | -26.8 | -29.3 | .6 | 291.4 | -.104 |
| 3350. | 551.7 | 350. | 9.6 | .000 | -27.3 | -29.8 | .6 | 291.6 | 2.629 |
| 3655. | 528.6 | 345. | 11.3 | .056 | -29.8 | -32.1 | .5 | 292.1 | 1.870 |
| 3959. | 506.5 | 350. | 12.9 | .053 | -32.2 | -34.5 | .4 | 292.8 | 2.166 |
| 4051. | 500.0 | 350. | 13.0 | .011 | -32.9 | -34.4 | .4 | 293.0 | 2.516 |

* VIRTUAL POTENTIAL TEMPERATURE

RADIOSONDE DATE 02/03/77 TIME 06:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (#10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTHV/DZ (#1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 859.3 | 300. | 7.2 | .000 | -3.0 | -3.5 | 3.4 | 282.7 | .000 |
| 86. | 850.0 | 318. | 13.6 | .744 | -3.3 | -4.4 | 3.2 | 283.3 | 6.203 |
| 224. | 835.3 | | | | -3.8 | -5.8 | 3.0 | 284.1 | 6.097 |
| 305. | 826.7 | 329. | 13.0 | -.027 | -4.5 | -6.4 | 2.9 | 284.2 | 1.032 |
| 609. | 795.1 | 335. | 15.5 | .082 | -7.1 | -8.3 | 2.6 | 284.5 | 1.162 |
| 914. | 764.7 | 337. | 18.0 | .082 | -9.7 | -10.2 | 2.3 | 284.9 | 1.087 |
| 974. | 758.8 | | | | -10.2 | -10.6 | 2.2 | 284.9 | 1.340 |
| 1219. | 734.8 | 342. | 19.5 | .049 | -11.7 | -12.4 | 2.0 | 285.9 | 3.874 |
| 1523. | 706.0 | 350. | 17.7 | -.059 | -13.6 | -14.5 | 1.8 | 287.0 | 3.761 |
| 1588. | 700.0 | 350. | 17.1 | -.092 | -14.0 | -15.0 | 1.7 | 287.3 | 3.818 |
| 1828. | 678.3 | 351. | 13.5 | -.150 | -15.4 | -16.7 | 1.5 | 288.3 | 4.174 |
| 2027. | 660.8 | | | | -16.6 | -18.1 | 1.4 | 289.1 | 3.956 |
| 2132. | 651.6 | 345. | 9.0 | -.148 | -17.5 | -18.9 | 1.3 | 289.2 | 1.242 |
| 2234. | 642.8 | | | | -18.4 | -19.7 | 1.2 | 289.3 | .905 |
| 2437. | 625.5 | 344. | 7.9 | -.036 | -20.0 | -21.3 | 1.1 | 289.7 | 2.028 |
| 2673. | 605.8 | | | | -21.9 | -23.3 | 1.0 | 290.2 | 1.877 |
| 2741. | 600.2 | 348. | 8.8 | .030 | -22.5 | -24.0 | .9 | 290.2 | 1.002 |
| 3046. | 575.7 | 355. | 10.8 | .066 | -25.1 | -27.2 | .7 | 290.6 | 1.304 |
| 3198. | 563.8 | | | | -26.4 | -28.9 | .6 | 290.8 | 1.269 |
| 3350. | 551.9 | 357. | 12.5 | .056 | -27.6 | -30.1 | .6 | 291.2 | 2.284 |
| 3655. | 528.8 | 351. | 13.9 | .046 | -30.1 | -32.5 | .5 | 291.7 | 1.850 |
| 3959. | 506.7 | 352. | 14.0 | .003 | -32.6 | -35.0 | .4 | 292.3 | 1.747 |
| 4053. | 500.0 | 352. | 14.1 | .011 | -33.4 | -35.7 | .4 | 292.4 | 1.440 |

* VIRTUAL POTENTIAL TEMPERATURE

RADIO SCNDE DATE 02/03/77 TIME 08:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTHV/DZ (*1000) |
|----------|---------------|-------------------|-------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 860.0 | 305. | 4.1 | .000 | -2.5 | -6.3 | 2.8 | 283.1 | .000 |
| 93. | 850.0 | 319. | 11.5 | .796 | -2.9 | -7.7 | 2.5 | 283.6 | 5.210 |
| 146. | 844.3 | | | | -3.2 | -8.5 | 2.4 | 283.8 | 3.909 |
| 305. | 827.4 | 332. | 10.8 | -.033 | -4.6 | -9.4 | 2.3 | 283.9 | .914 |
| 609. | 795.8 | 333. | 13.2 | .079 | -7.3 | -11.0 | 2.1 | 284.2 | .856 |
| 754. | 781.3 | | | | -8.6 | -11.8 | 2.0 | 284.3 | .589 |
| 914. | 765.3 | 333. | 15.2 | .066 | -10.0 | -12.0 | 2.0 | 284.4 | 1.097 |
| 1056. | 751.3 | | | | -11.3 | -12.2 | 2.0 | 284.5 | .663 |
| 1219. | 735.5 | 337. | 16.2 | .033 | -12.3 | -13.1 | 1.9 | 285.1 | 3.829 |
| 1523. | 706.7 | 342. | 15.5 | -.023 | -14.3 | -14.7 | 1.7 | 286.2 | 3.408 |
| 1538. | 705.3 | | | | -14.4 | -14.8 | 1.7 | 286.2 | 3.323 |
| 1595. | 700.0 | 343. | 15.2 | -.042 | -14.9 | -15.3 | 1.7 | 286.3 | .945 |
| 1828. | 678.7 | 342. | 13.4 | -.077 | -16.5 | -17.3 | 1.4 | 287.0 | 3.068 |
| 2046. | 659.3 | | | 3.968 | -18.1 | -19.1 | 1.3 | 287.6 | 2.553 |
| 2132. | 651.7 | 336. | 11.4-10.066 | | -18.4 | -20.0 | 1.2 | 288.2 | 6.993 |
| 2270. | 639.8 | | | | -18.9 | -21.4 | 1.1 | 289.1 | 6.764 |
| 2437. | 625.5 | 337. | 11.3 | -.003 | -20.1 | -22.9 | 1.0 | 289.6 | 2.886 |
| 2741. | 600.1 | 343. | 12.4 | .036 | -22.4 | -25.6 | .8 | 290.3 | 2.497 |
| 3046. | 575.8 | 354. | 12.5 | .003 | -24.6 | -28.4 | .6 | 291.2 | 2.780 |
| 3181. | 565.3 | | | | -25.6 | -29.6 | .6 | 291.5 | 2.584 |
| 3317. | 554.8 | | | | -26.0 | -30.6 | .5 | 292.6 | 7.987 |
| 3350. | 552.2 | 8. | 11.8 | -.023 | -26.3 | -31.5 | .5 | 292.6 | .917 |
| 3655. | 529.2 | 10. | 11.5 | -.010 | -29.1 | -39.3 | .2 | 292.8 | .579 |
| 3846. | 515.3 | | | 4.628 | -30.8 | -44.2 | .1 | 293.0 | .869 |
| 3959. | 507.2 | 13. | 9.6 | -7.063 | -31.1 | -43.4 | .2 | 294.0 | 8.576 |
| 4056. | 500.3 | | | | -31.2 | -42.6 | .2 | 295.0 | 10.669 |
| 4060. | 500.0 | 10. | 9.9 | .030 | -31.3 | -42.6 | .2 | 294.9 | -25.000 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|-------------|-------------------|---------------------|
| 02/03/77 | 09:00:00 | DPGWV |
| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
| 76. | 325.0 | 5.7 |
| 146. | 332.0 | 6.0 |
| 204. | 338.0 | 6.2 |
| 259. | 338.0 | 6.8 |
| 314. | 338.0 | 7.0 |
| 369. | 339.0 | 7.3 |
| 424. | 340.0 | 7.5 |
| 479. | 338.0 | 8.2 |
| 533. | 336.0 | 9.0 |
| 588. | 332.0 | 9.0 |
| 643. | 329.0 | 10.0 |
| 698. | 329.0 | 10.2 |
| 753. | 330.0 | 11.1 |
| 808. | 330.0 | 12.9 |
| 863. | 330.0 | 13.8 |
| 918. | 330.0 | 14.9 |
| 972. | 331.0 | 15.0 |
| 1027. | 331.0 | 15.0 |

RADIOSONDE DATE 02/03/77 TIME 11:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DIJ/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|-----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 860.7 | 335. | 4.1 | .000 | .2 | -13.4 | 1.6 | 285.6 | .000 |
| 99. | 850.0 | 326. | 10.5 | .646 | -.8 | -13.4 | 1.6 | 285.6 | -.216 |
| 305. | 828.2 | 329. | 9.3 | -.058 | -3.0 | -13.3 | 1.6 | 285.4 | -.895 |
| 609. | 796.9 | 339. | 12.7 | .112 | -6.0 | -13.1 | 1.7 | 285.4 | -.086 |
| 695. | 788.3 | | | | -7.1 | -13.1 | 1.8 | 285.1 | -3.353 |
| 914. | 766.3 | 340. | 15.0 | .075 | -9.0 | -12.5 | 1.9 | 285.4 | 1.322 |
| 991. | 758.8 | | | | -9.6 | -12.3 | 2.0 | 285.5 | 2.112 |
| 1219. | 736.5 | 342. | 15.8 | .026 | -11.4 | -13.7 | 1.8 | 286.0 | 1.982 |
| 1523. | 707.7 | 343. | 15.0 | -.026 | -13.8 | -15.6 | 1.6 | 286.6 | 1.955 |
| 1607. | 700.0 | 344. | 14.6 | -.048 | -14.5 | -16.2 | 1.5 | 286.7 | 1.326 |
| 1785. | 683.8 | | | | -15.9 | -17.3 | 1.4 | 287.1 | 1.945 |
| 1828. | 679.9 | 341. | 13.2 | -.063 | -16.1 | -17.8 | 1.4 | 287.3 | 5.520 |
| 2132. | 652.9 | 337. | 11.5 | -.056 | -17.5 | -21.7 | 1.0 | 289.0 | 5.603 |
| 2437. | 626.9 | 343. | 12.4 | .030 | -18.8 | -25.6 | .8 | 290.8 | 6.043 |
| 2510. | 620.8 | | | | -19.2 | -26.6 | .7 | 291.2 | 4.730 |
| 2741. | 601.6 | 351. | 12.6 | .007 | -21.0 | -28.5 | .6 | 291.7 | 2.290 |
| 2914. | 587.8 | | | | -22.4 | -29.9 | .5 | 292.0 | 1.740 |
| 3014. | 579.8 | | | | -23.2 | -29.5 | .6 | 292.2 | 2.165 |
| 3046. | 577.3 | 1. | 10.9 | -.056 | -23.4 | -29.9 | .5 | 292.4 | 3.872 |
| 3116. | 571.8 | | | | -23.6 | -31.0 | .5 | 292.9 | 7.969 |
| 3350. | 553.6 | 6. | 10.6 | -.010 | -25.5 | -34.8 | .4 | 293.4 | 1.906 |
| 3561. | 537.8 | | | | -27.1 | -38.2 | .3 | 293.9 | 2.423 |
| 3655. | 530.8 | 5. | 11.3 | .023 | -27.7 | -38.1 | .3 | 294.3 | 4.096 |
| 3959. | 508.7 | 11. | 11.1 | -.007 | -29.6 | -37.9 | .3 | 295.6 | 4.271 |
| 4082. | 500.0 | 11. | 11.5 | .033 | -30.4 | -37.8 | .3 | 296.0 | 3.964 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| | | |
|----------|----------|-------|
| DATE | TIME | PLACE |
| 02/03/77 | 12:00:00 | DPGWV |

| | | |
|------|----------|------------|
| HGT. | WIND DIR | WIND SPEED |
| (M) | (DEG) | (M/S) |

| | | |
|------|-------|------|
| 76. | 336.0 | 10.0 |
| 146. | 335.0 | 9.9 |
| 204. | 333.0 | 9.4 |
| 259. | 333.0 | 9.0 |
| 314. | 333.0 | 10.5 |
| 369. | 333.0 | 10.6 |
| 424. | 329.0 | 10.5 |
| 479. | 328.0 | 10.1 |
| 533. | 328.0 | 10.5 |
| 588. | 328.0 | 11.1 |
| 643. | 328.0 | 10.2 |
| 698. | 326.0 | 9.2 |
| 753. | 326.0 | 9.8 |
| 808. | 326.0 | 9.1 |
| 863. | 326.0 | 9.0 |
| 918. | 326.0 | 8.5 |
| 972. | 326.0 | 8.0 |

RADIOSONDE DATE 02/03/77 TIME 14:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 861.6 | 330. | 7.2 | .000 | 2.1 | -14.9 | 1.4 | 287.5 | .000 |
| 108. | 850.0 | 331. | 11.7 | .417 | 1.0 | -14.7 | 1.4 | 287.5 | -.270 |
| 305. | 829.2 | 341. | 10.8 | -.046 | -.9 | -14.3 | 1.5 | 287.5 | .268 |
| 609. | 797.9 | 341. | 11.3 | .016 | -4.0 | -13.8 | 1.6 | 287.4 | -.350 |
| 899. | 769.3 | | | | -6.9 | -13.2 | 1.8 | 287.3 | -.301 |
| 914. | 767.8 | 341. | 11.5 | .007 | -7.0 | -13.3 | 1.8 | 287.4 | 3.367 |
| 1219. | 737.9 | 339. | 11.8 | .010 | -9.6 | -14.4 | 1.7 | 287.8 | 1.405 |
| 1523. | 709.2 | 335. | 11.9 | .003 | -12.2 | -15.5 | 1.6 | 288.2 | 1.307 |
| 1624. | 700.0 | 334. | 11.9 | .000 | -13.0 | -15.9 | 1.6 | 288.4 | 1.839 |
| 1828. | 681.0 | 333. | 11.3 | -.029 | -14.8 | -16.7 | 1.5 | 288.6 | 1.259 |
| 1974. | 668.8 | | | | -16.0 | -17.2 | 1.5 | 288.8 | .974 |
| 2132. | 654.8 | 338. | 10.1 | -.039 | -17.2 | -20.1 | 1.2 | 289.1 | 2.176 |
| 2184. | 650.3 | | | | -17.6 | -21.0 | 1.1 | 289.2 | 1.995 |
| 2277. | 642.3 | | | | -17.1 | -23.1 | .9 | 290.8 | 16.803 |
| 2437. | 628.7 | 347. | 10.3 | .007 | -18.2 | -24.5 | .8 | 291.3 | 3.201 |
| 2665. | 609.8 | | | | -19.8 | -26.6 | .7 | 292.0 | 3.017 |
| 2741. | 603.5 | 353. | 11.8 | .049 | -20.3 | -27.1 | .7 | 292.3 | 3.765 |
| 2961. | 585.8 | | | | -21.9 | -28.4 | .6 | 292.9 | 2.832 |
| 3046. | 579.1 | 356. | 13.5 | .056 | -22.1 | -29.3 | .6 | 293.6 | 8.511 |
| 3063. | 577.8 | | | | -22.2 | -29.5 | .6 | 293.7 | 4.121 |
| 3350. | 555.5 | 1. | 14.5 | .033 | -24.5 | -32.5 | .4 | 294.3 | 2.021 |
| 3479. | 545.8 | | | | -25.5 | -33.9 | .4 | 294.6 | 2.232 |
| 3655. | 532.7 | 10. | 15.0 | .016 | -26.1 | -30.4 | .6 | 295.9 | 7.763 |
| 3708. | 528.8 | | | | -26.3 | -29.4 | .6 | 296.3 | 7.425 |
| 3959. | 510.6 | 21. | 15.4 | .013 | -28.1 | -31.8 | .5 | 297.1 | 3.110 |
| 4110. | 500.0 | 22. | 15.5 | .007 | -29.3 | -33.3 | .5 | 297.4 | 2.075 |

* VIRTUAL POTENTIAL TEMPERATURE

PILOT BALLOON DATA

| DATE | TIME | PLACE |
|----------|----------|-------|
| 02/03/77 | 15:00:00 | DPGWV |

| HGT. (M) | WIND DIR (DEG) | WIND SPEED (M/S) |
|-------------|-------------------|---------------------|
| 76. | 349.0 | 10.4 |
| 146. | 349.0 | 9.0 |
| 204. | 348.0 | 7.5 |
| 259. | 348.0 | 7.8 |
| 314. | 348.0 | 7.8 |
| 369. | 346.0 | 8.1 |
| 424. | 345.0 | 9.0 |
| 479. | 343.0 | 8.5 |
| 533. | 341.0 | 8.0 |
| 588. | 340.0 | 8.1 |
| 643. | 340.0 | 9.0 |
| 698. | 340.0 | 9.0 |
| 753. | 340.0 | 8.5 |
| 808. | 339.0 | 9.0 |
| 863. | 337.0 | 9.2 |
| 918. | 337.0 | 10.0 |
| 972. | 337.0 | 10.0 |
| 1027. | 336.0 | 9.9 |
| 1082. | 337.0 | 9.5 |
| 1137. | 337.0 | 17.5 |
| 1192. | 337.0 | 26.0 |

| RADIO SCNDE DATE 02/03/77 TIME 17:00:00 LOCATION DPGWV | | | | | | | | | | |
|--|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|--|
| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (#10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTHV/DZ (#1000) | |
| 0. | 862.9 | 315. | 8.8 | .000 | 2.2 | -5.4 | 3.0 | 287.7 | .000 | |
| 29. | 859.8 | | | | 2.5 | -10.1 | 2.1 | 288.2 | 15.581 | |
| 121. | 850.0 | 332. | 11.5 | .223 | 1.7 | -10.2 | 2.1 | 288.3 | 1.180 | |
| 305. | 830.7 | 343. | 11.0 | -.027 | .0 | -10.4 | 2.1 | 288.4 | .585 | |
| 603. | 800.3 | | | | -2.8 | -10.7 | 2.1 | 288.5 | .364 | |
| 609. | 799.7 | 347. | 12.4 | .046 | -2.9 | -10.7 | 2.1 | 288.5 | -7.427 | |
| 914. | 769.1 | 347. | 12.5 | .003 | -5.9 | -11.4 | 2.1 | 288.5 | -.024 | |
| 1219. | 739.7 | 344. | 12.4 | -.003 | -8.9 | -12.2 | 2.0 | 288.4 | -.164 | |
| 1388. | 723.8 | | | | -10.5 | -12.6 | 2.0 | 288.5 | .219 | |
| 1523. | 711.0 | 339. | 11.8 | -.020 | -11.6 | -13.5 | 1.9 | 288.7 | 1.796 | |
| 1641. | 700.0 | 337. | 11.8 | .000 | -12.6 | -14.3 | 1.8 | 288.9 | 1.401 | |
| 1828. | 683.0 | 336. | 11.8 | .000 | -14.1 | -15.5 | 1.7 | 289.2 | 1.822 | |
| 2132. | 656.0 | 336. | 11.5 | -.010 | -16.5 | -17.5 | 1.5 | 289.8 | 2.005 | |
| 2437. | 630.2 | 342. | 11.8 | .010 | -19.0 | -19.5 | 1.3 | 290.3 | 1.500 | |
| 2507. | 624.3 | | | | -19.6 | -20.0 | 1.2 | 290.4 | 1.246 | |
| 2741. | 604.9 | 350. | 14.5 | .089 | -20.1 | -22.3 | 1.0 | 292.4 | 8.636 | |
| 3011. | 583.3 | | | | -20.7 | -24.9 | .9 | 294.7 | 8.601 | |
| 3046. | 580.5 | 355. | 17.2 | .089 | -20.9 | -25.2 | .8 | 294.9 | 4.817 | |
| 3350. | 556.9 | 1. | 17.2 | .000 | -23.0 | -28.5 | .6 | 295.9 | 3.295 | |
| 3655. | 534.1 | 7. | 17.0 | -.007 | -25.1 | -31.8 | .5 | 296.9 | 3.334 | |
| 3896. | 516.8 | | | | -26.7 | -34.3 | .4 | 297.7 | 3.564 | |
| 3959. | 512.3 | 12. | 17.4 | .013 | -27.3 | -34.7 | .4 | 297.8 | .266 | |
| 4133. | 500.0 | 13. | 17.0 | -.023 | -28.9 | -35.6 | .4 | 297.9 | .696 | |
| * VIRTUAL POTENTIAL TEMPERATURE | | | | | | | | | | |

* VIRTUAL POTENTIAL TEMPERATURE

RADIO SCNDE DATE 08/03/77 TIME 12:00:00 LOCATION DP3WV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (#10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | OTHV/DZ (#1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 872.0 | 45. | 1.5 | .000 | 10.6 | -8.6 | 2.3 | 295.5 | .000 |
| 51. | 866.7 | | | | 9.7 | -12.3 | 1.7 | 295.0 | -10.321 |
| 157. | 850.0 | 327. | 2.5 | .051 | 7.9 | -12.1 | 1.8 | 294.8 | -1.578 |
| 287. | 842.2 | | | | 7.1 | -12.0 | 1.8 | 294.7 | -.638 |
| 305. | 840.4 | 17. | 2.2 | -.028 | 7.0 | -12.2 | 1.8 | 294.8 | 3.925 |
| 578. | 812.8 | | | | 5.5 | -15.7 | 1.4 | 295.9 | 4.261 |
| 609. | 809.7 | 345. | 3.9 | .056 | 5.2 | -15.8 | 1.4 | 295.9 | .114 |
| 914. | 779.7 | 329. | 6.2 | .075 | 2.7 | -17.3 | 1.3 | 296.4 | 1.656 |
| 1219. | 750.7 | 317. | 7.9 | .056 | .1 | -18.8 | 1.1 | 296.8 | 1.269 |
| 1441. | 730.3 | | | | -1.7 | -19.9 | 1.1 | 297.2 | 1.639 |
| 1523. | 722.7 | 314. | 8.8 | .030 | -2.5 | -19.2 | 1.2 | 297.2 | .321 |
| 1760. | 700.0 | 314. | 9.1 | .013 | -4.9 | -17.1 | 1.4 | 297.3 | .484 |
| 1828. | 655.3 | 314. | 9.1 | .000 | -5.4 | -16.6 | 1.5 | 297.4 | .458 |
| 2098. | 671.8 | | | | -7.9 | -14.3 | 1.9 | 297.6 | .754 |
| 2132. | 668.8 | 315. | 8.7 | -.013 | -8.1 | -15.3 | 1.7 | 297.7 | 3.847 |
| 2437. | 643.0 | 309. | 8.3 | -.013 | -9.7 | -24.1 | .8 | 299.1 | 4.552 |
| 2659. | 624.8 | | | | -10.9 | -30.5 | .5 | 300.1 | 4.622 |
| 2741. | 618.1 | 297. | 8.6 | .010 | -11.5 | -28.7 | .6 | 300.4 | 3.116 |
| 3046. | 593.9 | 284. | 10.4 | .059 | -13.9 | -21.8 | 1.1 | 301.1 | 2.505 |
| 3146. | 586.1 | | | | -14.7 | -19.6 | 1.4 | 301.4 | 2.549 |
| 3350. | 570.5 | 276. | 12.6 | .072 | -15.5 | -33.5 | .4 | 302.6 | 5.946 |
| 3433. | 564.3 | | | | -15.6 | -39.1 | .2 | 303.4 | 9.620 |
| 3642. | 548.3 | | | | -16.7 | -35.1 | .3 | 304.5 | 5.469 |
| 3655. | 547.9 | 273. | 14.7 | .069 | -16.8 | -35.1 | .3 | 304.6 | 1.868 |
| 3959. | 525.9 | 275. | 17.1 | .079 | -19.0 | -33.2 | .4 | 305.5 | 3.167 |
| 4318. | 500.0 | 277. | 19.2 | .058 | -21.7 | -30.9 | .6 | 306.7 | 3.281 |

* VIRTUAL POTENTIAL TEMPERATURE

RADIO SCNDE DATE 08/03/77 TIME 14:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 870.8 | 80. | 5.2 | .000 | 13.3 | -7.9 | 2.4 | 298.5 | .000 |
| 126. | 858.0 | | | | 11.4 | -12.4 | 1.7 | 297.6 | -6.736 |
| 186. | 850.0 | 29. | 3.1 | -.113 | 10.7 | -12.4 | 1.7 | 297.7 | 1.121 |
| 305. | 839.3 | 53. | 4.6 | .126 | 9.6 | -12.4 | 1.8 | 297.6 | -.616 |
| 609. | 808.6 | 52. | 4.4 | -.007 | 6.6 | -12.5 | 1.8 | 297.6 | .022 |
| 914. | 779.0 | 43. | 3.6 | -.026 | 3.5 | -12.7 | 1.8 | 297.5 | -.442 |
| 1219. | 750.6 | | | | .4 | -12.8 | 1.9 | 297.3 | -.598 |
| 1227. | 749.8 | 18. | 2.3 | -.042 | .3 | -12.8 | 1.9 | 297.3 | -2.207 |
| 1443. | 729.8 | 288. | 9.8 | .347 | -1.5 | -19.5 | 1.1 | 297.5 | .893 |
| 1523. | 722.5 | 301. | 2.6 | -.900 | -1.6 | -22.1 | .9 | 298.2 | 8.840 |
| 1547. | 720.3 | 0. | .0 | -1.083 | -1.6 | -22.9 | .8 | 298.4 | 10.395 |
| 1757. | 700.0 | 279. | 4.1 | .195 | -3.7 | -21.0 | 1.0 | 298.6 | .744 |
| 1828. | 695.0 | 276. | 4.5 | .056 | -4.2 | -20.6 | 1.1 | 298.6 | .924 |
| 2132. | 668.5 | 273. | 6.3 | .059 | -7.0 | -18.0 | 1.4 | 298.9 | .834 |
| 2386. | 647.3 | | | | -9.4 | -15.9 | 1.7 | 299.0 | .418 |
| 2437. | 643.0 | 282. | 7.8 | .049 | -9.6 | -22.2 | 1.0 | 299.2 | 4.203 |
| 2495. | 638.2 | | | | -9.8 | -29.3 | .5 | 299.6 | 5.656 |
| 2641. | 626.3 | | | | -8.3 | -43.0 | .1 | 302.8 | 22.330 |
| 2741. | 618.1 | | | | -9.1 | -43.4 | .1 | 303.0 | 2.247 |
| 3046. | 594.0 | 290. | 11.6 | .062 | -11.4 | -44.5 | .1 | 303.8 | 2.607 |
| 3350. | 570.8 | 287. | 13.1 | .049 | -13.8 | -45.5 | .1 | 304.5 | 2.180 |
| 3596. | 552.8 | | | | -15.6 | -46.4 | .1 | 305.2 | 2.720 |
| 3655. | 548.4 | 285. | 13.7 | .020 | -16.1 | -46.6 | .1 | 305.3 | 1.766 |
| 3959. | 526.4 | 286. | 13.9 | .007 | -18.8 | -48.1 | .1 | 305.6 | 1.149 |
| 4326. | 500.0 | 0. | 13.8 | -.003 | -22.1 | -49.8 | .1 | 306.1 | 1.375 |

* VIRTUAL POTENTIAL TEMPERATURE

RADIO SCNDE DATE 14/03/77 TIME 12:00:00 LOCATION DP3WV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | OTHV/DZ (#1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 866.1 | 333. | 6.7 | .000 | 1.0 | -11.0 | 1.9 | 286.0 | .000 |
| 59. | 859.7 | | | | -5 | -12.8 | 1.7 | 285.0 | -16.871 |
| 149. | 850.0 | 317. | 6.3 | -.027 | -1.4 | -13.2 | 1.6 | 285.0 | -.260 |
| 305. | 833.4 | 333. | 4.8 | -.096 | -3.0 | -13.9 | 1.6 | 284.9 | -.549 |
| 609. | 801.8 | 318. | 4.2 | -.020 | -6.1 | -15.1 | 1.5 | 284.7 | -.508 |
| 758. | 786.8 | | | | -7.6 | -15.7 | 1.4 | 284.7 | -.495 |
| 914. | 771.0 | 309. | 4.7 | .016 | -9.0 | -17.4 | 1.3 | 284.8 | .758 |
| 1219. | 741.0 | 305. | 5.9 | .039 | -11.8 | -20.7 | 1.0 | 284.9 | .493 |
| 1515. | 713.0 | | | | -14.6 | -23.9 | .8 | 285.0 | .110 |
| 1523. | 712.2 | 299. | 6.3 | .013 | -14.6 | -24.1 | .8 | 285.0 | 11.158 |
| 1654. | 700.0 | 296. | 6.2 | -.008 | -14.8 | -28.4 | .5 | 286.2 | 8.769 |
| 1678. | 697.8 | | | | -14.8 | -29.2 | .5 | 286.4 | 10.477 |
| 1828. | 683.9 | 293. | 6.0 | -.011 | -16.0 | -30.4 | .4 | 286.8 | 2.049 |
| 2132. | 656.5 | 285. | 6.4 | .013 | -18.4 | -32.8 | .4 | 287.4 | 2.145 |
| 2437. | 630.2 | 277. | 9.3 | .095 | -20.8 | -35.3 | .3 | 288.0 | 2.033 |
| 2741. | 604.9 | 271. | 9.8 | .016 | -23.2 | -37.7 | .2 | 288.7 | 1.986 |
| 2743. | 604.8 | | | | -23.2 | -37.7 | .2 | 288.7 | 6.826 |
| 3046. | 579.8 | 268. | 10.4 | .020 | -25.7 | -39.1 | .2 | 289.2 | 1.914 |
| 3350. | 555.7 | 268. | 11.3 | .030 | -28.3 | -40.5 | .2 | 289.7 | 1.492 |
| 3655. | 532.7 | 268. | 12.8 | .049 | -30.9 | -41.9 | .2 | 290.1 | 1.333 |
| 3913. | 513.8 | | | | -33.0 | -43.1 | .2 | 290.6 | 1.818 |
| 3959. | 510.4 | 265. | 13.5 | .023 | -33.4 | -43.5 | .2 | 290.6 | 1.443 |
| 4102. | 500.0 | 264. | 13.5 | .000 | -34.6 | -45.0 | .1 | 290.9 | 1.744 |

* VIRTUAL POTENTIAL TEMPERATURE

RADIOSONDE DATE 14/03/77 TIME 14:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | OTHV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 866.7 | 313. | 4.1 | .000 | 1.7 | -14.0 | 1.5 | 286.6 | .000 |
| 139. | 851.8 | | | | .1 | -18.2 | 1.1 | 286.3 | -2.343 |
| 156. | 850.0 | 295. | 5.5 | .090 | -1.1 | -18.2 | 1.1 | 286.2 | -2.118 |
| 305. | 834.2 | 309. | 3.4 | -.141 | -1.5 | -18.3 | 1.1 | 286.3 | .447 |
| 609. | 802.6 | 307. | 3.4 | .000 | -4.5 | -18.3 | 1.1 | 286.3 | -.032 |
| 888. | 774.8 | | | | -7.2 | -18.3 | 1.2 | 286.3 | .006 |
| 914. | 772.2 | 308. | 3.7 | .010 | -7.5 | -18.5 | 1.1 | 286.2 | -1.949 |
| 1219. | 742.3 | 307. | 4.3 | .020 | -10.9 | -20.0 | 1.0 | 285.8 | -1.544 |
| 1372. | 727.7 | | | | -12.7 | -20.8 | 1.0 | 285.4 | -2.309 |
| 1432. | 721.8 | | | | -12.5 | -29.0 | .5 | 286.2 | 13.239 |
| 1523. | 713.3 | 306. | 5.7 | .046 | -13.3 | -29.5 | .5 | 286.3 | .956 |
| 1665. | 700.0 | 301. | 6.0 | .021 | -14.6 | -30.2 | .4 | 286.4 | .715 |
| 1828. | 685.1 | 297. | 6.4 | .025 | -16.0 | -31.0 | .4 | 286.6 | 1.248 |
| 2022. | 667.8 | | | | -17.7 | -32.0 | .4 | 286.8 | .982 |
| 2132. | 657.9 | 278. | 6.2 | -.007 | -18.4 | -33.7 | .3 | 287.2 | 3.900 |
| 2437. | 631.5 | 264. | 8.1 | .062 | -20.2 | -38.1 | .2 | 288.5 | 4.300 |
| 2517. | 624.8 | | | | -20.6 | -39.3 | .2 | 289.0 | 5.246 |
| 2741. | 605.9 | 267. | 10.0 | .062 | -22.6 | -40.9 | .2 | 289.2 | 1.057 |
| 3046. | 581.1 | 266. | 11.3 | .043 | -25.3 | -43.0 | .1 | 289.5 | 1.044 |
| 3305. | 560.8 | | | | -27.5 | -44.8 | .1 | 289.9 | 1.388 |
| 3350. | 557.3 | 265. | 12.0 | .023 | -27.9 | -45.1 | .1 | 289.9 | 1.024 |
| 3655. | 533.9 | 266. | 11.4 | -.020 | -30.2 | -46.7 | .1 | 290.7 | 2.700 |
| 3959. | 511.5 | 269. | 10.7 | -.023 | -32.5 | -50.0 | .1 | 291.5 | 2.613 |
| 4081. | 502.8 | | | | -33.4 | -49.1 | .1 | 291.9 | 2.787 |
| 4120. | 500.0 | 269. | 10.8 | .006 | -33.5 | -49.3 | .1 | 292.2 | 8.829 |

* VIRTUAL POTENTIAL TEMPERATURE

| RADIOSONDE DATE 30/03/77 TIME 12:00:00 LOCATION DPGWV | | | | | | | | | |
|---|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTMV/DZ (*1000) |
| 0. | 869.1 | 350. | 2.1 | .000 | 4.0 | -10.8 | 1.9 | 288.8 | .000 |
| 64. | 862.3 | | | | 3.1 | -12.4 | 1.7 | 288.5 | -5.141 |
| 179. | 850.0 | 326. | 2.0 | -.006 | 2.0 | -12.2 | 1.8 | 288.6 | .380 |
| 305. | 836.8 | 40. | 2.0 | .000 | .7 | -12.1 | 1.8 | 288.5 | -.535 |
| 538. | 812.8 | | | | -1.7 | -11.8 | 1.9 | 288.4 | -.519 |
| 609. | 805.5 | 80. | 2.4 | .013 | -2.4 | -11.8 | 1.9 | 288.4 | .036 |
| 914. | 774.9 | 132. | 2.8 | .013 | -5.3 | -12.1 | 1.9 | 288.5 | .308 |
| 1219. | 745.4 | 146. | 4.3 | .049 | -8.3 | -12.3 | 2.0 | 288.4 | -.128 |
| 1278. | 739.8 | | | | -8.9 | -12.3 | 2.0 | 288.4 | -.498 |
| 1523. | 716.5 | 148. | 6.5 | .072 | -10.8 | -16.4 | 1.5 | 288.9 | 1.901 |
| 1702. | 700.0 | 153. | 7.9 | .078 | -12.2 | -19.4 | 1.2 | 289.2 | 1.818 |
| 1828. | 688.6 | 157. | 8.9 | .079 | -13.2 | -21.5 | 1.0 | 289.4 | 1.716 |
| 1874. | 684.5 | | | | -13.6 | -22.2 | .9 | 289.4 | .851 |
| 2028. | 670.8 | | | | -14.4 | -27.0 | .6 | 290.2 | 4.708 |
| 2132. | 661.4 | 164. | 10.6 | .056 | -15.2 | -27.9 | .6 | 290.4 | 2.552 |
| 2437. | 634.9 | 171. | 11.4 | .026 | -17.5 | -30.5 | .5 | 291.2 | 2.549 |
| 2741. | 609.5 | 177. | 12.6 | .039 | -19.7 | -33.1 | .4 | 292.1 | 2.859 |
| 3046. | 585.1 | 178. | 12.6 | .000 | -22.0 | -35.7 | .3 | 292.8 | 2.420 |
| 3230. | 570.8 | | | | -23.4 | -37.3 | .3 | 293.3 | 2.330 |
| 3350. | 561.4 | 181. | 11.1 | -.049 | -24.3 | -36.7 | .3 | 293.6 | 2.817 |
| 3655. | 538.4 | 191. | 11.9 | .026 | -26.7 | -35.2 | .3 | 294.3 | 2.227 |
| 3690. | 535.8 | | | | -27.0 | -35.0 | .4 | 294.3 | 1.445 |
| 3833. | 525.3 | | | | -27.0 | -40.7 | .2 | 296.0 | 11.487 |
| 3959. | 516.1 | 200. | 13.8 | .062 | -28.1 | -41.2 | .2 | 296.1 | 1.340 |
| 4186. | 500.0 | 206. | 15.4 | .070 | -30.0 | -42.2 | .2 | 296.5 | 1.660 |

* VIRTUAL POTENTIAL TEMPERATURE

RADIOSONDE DATE 04/04/77 TIME 21:00:00 LOCATION DPGWV

| Z (M) | PRESS (MB) | WIND DIR (DEG) | U (M/S) | DU/DZ (*10) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTMV/DZ (*1000) |
|----------|---------------|-------------------|------------|----------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 875.2 | 10. | 2.6 | .000 | 13.4 | -2.9 | 3.5 | 298.3 | .000 |
| 95. | 865.3 | | | | 10.7 | -6.4 | 2.7 | 296.3 | -20.958 |
| 243. | 850.0 | 319. | 3.8 | .049 | 9.1 | -6.6 | 2.7 | 296.2 | -1.093 |
| 291. | 845.1 | | | | 8.6 | -6.6 | 2.8 | 296.2 | -.678 |
| 305. | 843.7 | 353. | 2.9 | -.145 | 8.5 | -6.6 | 2.8 | 296.2 | 2.581 |
| 609. | 812.8 | 327. | 3.1 | .007 | 5.3 | -7.2 | 2.7 | 296.0 | -.750 |
| 914. | 783.1 | 314. | 3.1 | .000 | 2.2 | -7.8 | 2.7 | 295.8 | -.547 |
| 915. | 783.0 | | | | 2.2 | -7.8 | 2.7 | 295.8 | 10.868 |
| 1219. | 753.8 | 322. | 3.3 | .007 | -.6 | -9.1 | 2.5 | 296.0 | .532 |
| 1523. | 725.6 | 331. | 4.4 | .036 | -3.5 | -10.4 | 2.4 | 296.0 | .107 |
| 1538. | 724.3 | | | | -3.6 | -10.4 | 2.4 | 296.0 | 2.853 |
| 1711. | 708.6 | | | | -3.6 | -12.1 | 2.1 | 297.9 | 10.487 |
| 1807. | 700.0 | 334. | 6.0 | .056 | -4.1 | -12.5 | 2.1 | 298.3 | 4.998 |
| 1828. | 698.2 | 333. | 6.1 | .048 | -4.2 | -12.6 | 2.1 | 298.4 | 5.082 |
| 2132. | 671.7 | 331. | 7.7 | .053 | -5.5 | -13.9 | 1.9 | 300.3 | 6.045 |
| 2198. | 666.1 | | | | -5.8 | -14.2 | 1.9 | 300.7 | 5.708 |
| 2437. | 646.2 | 332. | 8.8 | .036 | -4.0 | -18.6 | 1.4 | 305.2 | 19.075 |
| 2491. | 641.7 | | | | -3.6 | -19.6 | 1.3 | 306.3 | 19.367 |
| 2741. | 621.6 | 341. | 9.2 | .013 | -4.5 | -21.9 | 1.1 | 308.0 | 6.927 |
| 3046. | 598.0 | 343. | 9.2 | .000 | -5.6 | -24.6 | .9 | 310.1 | 6.940 |
| 3135. | 591.3 | | | | -5.9 | -25.5 | .8 | 310.7 | 7.201 |
| 3350. | 575.1 | 341. | 9.3 | .003 | -7.5 | -26.6 | .7 | 311.3 | 2.757 |
| 3655. | 552.9 | 336. | 10.3 | .033 | -9.9 | -28.1 | .7 | 312.0 | 2.187 |
| 3959. | 531.5 | 337. | 12.6 | .076 | -12.2 | -29.7 | .6 | 312.8 | 2.539 |
| 3990. | 529.4 | | | | -12.5 | -29.9 | .6 | 312.8 | -.238 |
| 4263. | 510.3 | 339. | 13.1 | .016 | -14.7 | -30.8 | .6 | 313.4 | 2.312 |
| 4416. | 500.0 | 325. | 14.8 | .111 | -15.9 | -31.3 | .6 | 313.8 | 2.395 |

* VIRTUAL POTENTIAL TEMPERATURE

Preceding Page BLANK - NOT FILMED

APPENDIX D

RAWINSONDE DATA SALT LAKE CITY

| RADIOSONDE | DATE 14/02/77 | TIME 05:00:00 | LOCATION SLC | | | | | |
|------------|---------------|-----------------|------------------|---------------|-----------------|--------------------|--|--|
| Z (M) | PRESS (MB) | TEMP (DEG C) | DENFT (DEG C) | MR (CM/KG) | THV* (DEG K) | STPV/DZ (*1000) | | |
| 0. | 879. | -1.7 | -3.9 | 3.3 | 282.3 | | | |
| 147. | 862. | 3.6 | -2.4 | 3.7 | 289.4 | 48.5 | | |
| 267. | 850. | 4.2 | -2.0 | 3.9 | 291.0 | 13.4 | | |
| 756. | 800. | 1.2 | -8.8 | 2.5 | 292.9 | 2.8 | | |
| 1177. | 759. | -1.9 | -6.3 | 3.0 | 294.1 | 2.8 | | |
| 1379. | 740. | -2.9 | -11.9 | 2.1 | 294.9 | 4.4 | | |
| 1631. | 717. | -4.1 | -11.1 | 2.3 | 296.3 | 5.5 | | |
| 1819. | 700. | -4.5 | -13.9 | 1.9 | 297.8 | 8.1 | | |
| 2274. | 661. | -6.5 | -13.5 | 1.3 | 300.4 | 5.7 | | |
| 3556. | 562. | -13.1 | -25.1 | .9 | 306.8 | 5.0 | | |
| 4403. | 500. | -19.1 | -35.1 | .4 | 309.8 | 3.6 | | |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | | | | | |
|---------------|-------------------|---------------------|----------------|--|--|--|--|
| 14/02/77 | 05:00:00 | SLC | | | | | |
| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | DU/DZ (*10) | | | | |
| 0. | 160.0 | 2.1 | | | | | |
| 267. | 250.0 | 1.0 | -.041 | | | | |
| 542. | 340.0 | 4.1 | .113 | | | | |
| 947. | 345.0 | 6.2 | .009 | | | | |
| 1151. | 330.0 | 6.7 | .016 | | | | |
| 1456. | 335.0 | 7.2 | .015 | | | | |
| 1819. | 340.0 | 8.8 | .044 | | | | |
| 2371. | 330.0 | 10.3 | .027 | | | | |
| 2980. | 345.0 | 14.4 | .067 | | | | |
| 3590. | 335.0 | 21.1 | .110 | | | | |
| 3895. | 335.0 | 20.6 | -.016 | | | | |
| 4403. | 335.0 | 20.6 | .000 | | | | |

RADIOSONDE DATE 14/02/77 TIME 17:00:00 LOCATION SLC

| Z (M) | PRESS (MB) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTMV/DZ (*1000) |
|----------|---------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 880. | 9.4 | -2.6 | 3.6 | 293.7 | -23.3 |
| 121. | 867. | 5.6 | -5.4 | 2.9 | 290.9 | -1.6 |
| 283. | 850. | 3.8 | -6.2 | 2.8 | 290.6 | 3.9 |
| 1121. | 766. | -1.1 | -16.1 | 1.4 | 293.9 | 5.2 |
| 1226. | 756. | -1.7 | -12.7 | 1.9 | 294.4 | 5.1 |
| 1834. | 700. | -4.7 | -19.7 | 1.1 | 297.5 | 5.9 |
| 2619. | 634. | -8.1 | -23.1 | .9 | 302.1 | 3.8 |
| 2962. | 607. | -10.3 | -20.3 | 1.2 | 303.4 | 8.4 |
| 3415. | 573. | -11.3 | -25.3 | .8 | 307.2 | 4.0 |
| 4145. | 522. | -15.7 | -31.7 | .5 | 310.2 | .6 |
| 4423. | 500. | -18.7 | -32.7 | .5 | 310.3 | |

* VIRTUAL POTENTIAL TEMPERATURE

DATE 14/02/77 TIME 17:00:00 PLACE SLC

| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | DU/DZ (*10) |
|---------------|-------------------|---------------------|----------------|
| 0. | 320.0 | 5.2 | |
| 283. | 325.0 | 6.2 | .035 |
| 542. | 330.0 | 6.2 | .000 |
| 847. | 335.0 | 6.2 | .000 |
| 1151. | 350.0 | 5.7 | -.016 |
| 1456. | 10.0 | 7.2 | .049 |
| 1834. | 5.0 | 10.3 | .082 |
| 2371. | 10.0 | 12.4 | .039 |
| 2980. | 5.0 | 21.1 | .143 |
| 3283. | 360.0 | 25.2 | .135 |
| 3590. | 355.0 | 25.2 | .000 |
| 4423. | 345.0 | 28.3 | .037 |

| RADIOSONDE | | DATE 15/02/77 | TIME 05:00:00 | LOCATION SLC | |
|------------|-------|---------------|---------------|--------------|---------|
| Z | PRESS | TEMP | DEWPT | MR | THV* |
| (M) | (MB) | (DEG C) | (DEG C) | (GM/KG) | (DEG K) |
| 0. | 881. | -1.1 | -4.4 | 3.1 | 282.6 |
| 92. | 871. | 2.4 | -3.6 | 3.4 | 287.3 |
| 288. | 850. | 2.4 | -5.6 | 3.0 | 289.2 |
| 906. | 787. | -1.7 | -9.7 | 2.3 | 291.1 |
| 956. | 782. | -1.9 | -6.6 | 3.0 | 291.6 |
| 1058. | 772. | -1.3 | -13.3 | 1.8 | 293.1 |
| 1254. | 753. | -2.5 | -12.5 | 1.9 | 293.9 |
| 1390. | 740. | -5 | -15.5 | 1.5 | 297.5 |
| 1840. | 700. | -1.9 | -14.9 | 1.7 | 300.7 |
| 2474. | 645. | -4.7 | -16.7 | 1.6 | 304.6 |
| 3501. | 564. | -12.7 | -21.7 | 1.2 | 307.0 |
| 4443. | 500. | -18.1 | -34.1 | .4 | 311.1 |
| | | | | | 50.1 |
| | | | | | 9.9 |
| | | | | | 3.1 |
| | | | | | 8.5 |
| | | | | | 14.8 |
| | | | | | 4.2 |
| | | | | | 26.3 |
| | | | | | 7.2 |
| | | | | | 6.2 |
| | | | | | 2.3 |
| | | | | | 4.3 |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | |
|----------|----------|------------|-------|
| 15/02/77 | 05:00:00 | SLC | |
| HEIGHT | WIND DIR | WIND SPEED | DU/DZ |
| (M) | (DEG) | (MPS) | (*10) |
| 0. | 130.0 | 3.1 | -.056 |
| 288. | 140.0 | 1.5 | -.020 |
| 542. | 350.0 | 1.2 | .118 |
| 847. | 330.0 | 4.6 | .102 |
| 1151. | 340.0 | 7.7 | .069 |
| 1456. | 335.0 | 9.8 | .068 |
| 1840. | 335.0 | 12.4 | .000 |
| 2371. | 340.0 | 12.4 | .025 |
| 2980. | 340.0 | 13.9 | .034 |
| 3590. | 340.0 | 16.0 | .000 |
| 4443. | 340.0 | 16.2 | |

| RADIOSONDE | | DATE 15/02/77 | TIME 17:00:00 | LOCATION SLC | | |
|------------|---------------|-----------------|------------------|---------------|-----------------|--------------------|
| Z (M) | PRESS (MB) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTHV/DZ (*1000) |
| 0. | 880. | 12.2 | -4.8 | 3.0 | 296.5 | |
| 94. | 870. | 9.6 | -7.4 | 2.5 | 294.7 | -19.5 |
| 290. | 850. | 7.8 | -8.2 | 2.4 | 294.8 | .3 |
| 780. | 800. | 3.4 | -10.5 | 2.1 | 295.2 | .8 |
| 1309. | 749. | -.3 | -13.3 | 1.8 | 296.7 | 2.9 |
| 1713. | 712. | -1.1 | -10.1 | 2.5 | 300.3 | 8.8 |
| 1857. | 700. | -.9 | -13.9 | 1.9 | 301.8 | 10.9 |
| 2510. | 645. | -4.3 | -22.3 | 1.0 | 305.0 | 4.8 |
| 3642. | 559. | -12.5 | -21.5 | 1.2 | 308.1 | 2.7 |
| 4025. | 532. | -14.7 | -28.7 | .7 | 309.7 | 4.3 |
| 4463. | 500. | -18.3 | -28.3 | .7 | 310.9 | 2.7 |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | |
|---------------|-------------------|---------------------|----------------|
| 15/02/77 | 17:00:00 | SLC | |
| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | DU/DZ (*10) |
| 0. | 20.0 | 4.6 | -.069 |
| 290. | 30.0 | 2.6 | -.083 |
| 542. | 15.0 | .5 | .069 |
| 847. | 285.0 | 2.6 | .102 |
| 1151. | 290.0 | 5.7 | .082 |
| 1456. | 300.0 | 8.2 | .117 |
| 1857. | 320.0 | 12.9 | .024 |
| 2066. | 320.0 | 13.4 | .075 |
| 2676. | 320.0 | 18.2 | .102 |
| 2980. | 325.0 | 21.1 | .017 |
| 3283. | 320.0 | 21.6 | -.081 |
| 3590. | 320.0 | 19.1 | |

| RADIOSONDE | DATE 16/02/77 | TIME 05:00:00 | LOCATION SLC | | | | |
|------------|---------------|-----------------|------------------|---------------|-----------------|--------------------|--|
| Z (M) | PRESS (MB) | TEMP (DEG C) | DEWPT (DEG C) | WR (CM/KG) | THV* (DEG K) | STPV/DZ (*1000) | |
| 0. | 890. | 6 | -4.4 | 3.1 | 284.5 | | |
| 84. | 871. | 6.6 | -7.4 | 2.5 | 291.5 | 87.3 | |
| 283. | 850. | 5.0 | -8.0 | 2.5 | 292.9 | 7.0 | |
| 1109. | 768. | 3.6 | -11.4 | 2.1 | 298.8 | 7.2 | |
| 1856. | 700. | -2.1 | -11.1 | 2.3 | 300.6 | 2.4 | |
| 2157. | 674. | -4.1 | -14.1 | 1.9 | 301.5 | 3.2 | |
| 2384. | 655. | -2.3 | -32.3 | .4 | 305.3 | 13.7 | |
| 4027. | 532. | -11.9 | -41.9 | .2 | 313.0 | 4.4 | |
| 4473. | 500. | -15.1 | -46.1 | .1 | 313.4 | 1.1 | |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | | | | |
|---------------|-------------------|---------------------|----------------|--|--|--|
| 16/02/77 | 05:00:00 | SLC | | | | |
| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | DU/DZ (*10) | | | |
| 0. | 140.0 | 3.1 | | | | |
| 283. | 150.0 | 3.6 | .018 | | | |
| 542. | 165.0 | 2.6 | -.039 | | | |
| 847. | 190.0 | 2.6 | .000 | | | |
| 1151. | 250.0 | 3.6 | .033 | | | |
| 1456. | 285.0 | 5.7 | .069 | | | |
| 1856. | 300.0 | 8.8 | .077 | | | |
| 2371. | 300.0 | 10.3 | .023 | | | |
| 2980. | 300.0 | 13.4 | .051 | | | |
| 3590. | 315.0 | 10.3 | -.051 | | | |
| 4199. | 330.0 | 18.0 | .126 | | | |
| 4473. | 320.0 | 19.6 | .058 | | | |

| RADIOSONDE | | DATE 16/02/77 | TIME 17:00:00 | LOCATION SLC | | |
|------------|---------------|-----------------|------------------|---------------|-----------------|--------------------|
| Z (M) | PRESS (MB) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTHV/DZ (*1000) |
| 0. | 877. | 13.2 | -1.8 | 3.8 | 298.0 | |
| 95. | 867. | 10.6 | -6.4 | 2.7 | 296.1 | -20.3 |
| 266. | 850. | 10.6 | -5.4 | 3.0 | 297.8 | 10.1 |
| 764. | 800. | 8.2 | -8.8 | 2.5 | 300.3 | 5.1 |
| 1853. | 700. | -3 | -16.3 | 1.5 | 302.4 | 1.9 |
| 2095. | 679. | -1.9 | -17.6 | 1.4 | 303.3 | 3.5 |
| 2540. | 642. | -2.5 | -32.5 | .4 | 307.3 | 9.1 |
| 3562. | 563. | -11.5 | -28.5 | .6 | 308.5 | 1.2 |
| 4463. | 500. | -16.5 | -46.5 | .1 | 313.0 | 4.9 |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | | | |
|----------|----------|------------|-------|--|-------|
| 16/02/77 | 17:00:00 | SLC | | | |
| HEIGHT | WIND DIR | WIND SPEED | DU/DZ | | |
| (M) | (DEG) | (MPS) | (*10) | | |
| 0. | 360.0 | 5.2 | | | |
| 266. | 355.0 | .5 | | | -.177 |
| 542. | 180.0 | 4.6 | | | .149 |
| 847. | 190.0 | 5.7 | | | .036 |
| 1151. | 235.0 | 5.7 | | | .000 |
| 1456. | 265.0 | 7.7 | | | .066 |
| 1761. | 280.0 | 9.8 | | | .069 |
| 1853. | 285.0 | 11.3 | | | .163 |
| 2371. | 290.0 | 15.5 | | | .091 |
| 2980. | 295.0 | 18.5 | | | .049 |
| 3590. | 295.0 | 20.1 | | | .026 |
| 4463. | 290.0 | 24.2 | | | .047 |

| RADIOSONDE | DATE 17/02/77 | TIME 05:00:00 | LOCATION SLC | | | | | |
|------------|---------------|---------------|--------------|---------|---------|---------|--|--|
| Z | PRESS | TEMP | DEWPT | MR | THV* | DTAV/DZ | | |
| (M) | (MB) | (DEG C) | (DEG C) | (GM/KG) | (DEG K) | (*1000) | | |
| 0. | 877. | 3 | -3.4 | 3.4 | 284.2 | | | |
| 112. | 865. | 5.0 | -5.0 | 3.0 | 290.5 | 55.9 | | |
| 257. | 850. | 7.0 | -7.0 | 2.7 | 294.0 | 24.1 | | |
| 755. | 800. | 8.0 | -9.0 | 2.4 | 300.1 | 12.4 | | |
| 1839. | 700. | -1.3 | -16.3 | 1.5 | 301.3 | 1.1 | | |
| 4326. | 512. | -16.9 | -46.9 | .1 | 310.4 | 2.6 | | |
| 4433. | 500. | -18.7 | -29.7 | .6 | 310.4 | .2 | | |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | | | | | |
|----------|----------|------------|-------|--|--|--|--|
| 17/02/77 | 05:00:00 | SLC | | | | | |
| HEIGHT | WIND DIR | WIND SPEED | DU/DZ | | | | |
| (M) | (DEG) | (MPS) | (*10) | | | | |
| 0. | 160.0 | 2.1 | | | | | |
| 257. | 195.0 | 3.6 | .058 | | | | |
| 542. | 240.0 | 3.6 | .000 | | | | |
| 847. | 285.0 | 6.2 | .085 | | | | |
| 1151. | 285.0 | 7.7 | .049 | | | | |
| 1456. | 285.0 | 10.3 | .085 | | | | |
| 1839. | 285.0 | 12.9 | .068 | | | | |
| 2371. | 290.0 | 13.9 | .019 | | | | |
| 2980. | 290.0 | 16.5 | .043 | | | | |
| 3590. | 290.0 | 20.6 | .067 | | | | |
| 4437. | 290.0 | 21.6 | .012 | | | | |

| RADIOSONDE | DATE | 17/02/77 | TIME | 17:00:00 | LOCATION | SLC |
|------------|-------|----------|---------|----------|----------|---------|
| Z | PRESS | TEMP | DENPT | MR | THV* | DTIV/DZ |
| (M) | (MB) | (DEG C) | (DEG C) | (GM/KG) | (DEG K) | (*1000) |
| 0. | 877. | 15.6 | -5.4 | 2.9 | 300.3 | |
| 76. | 869. | 12.8 | -5.2 | 3.0 | 298.2 | -27.8 |
| 267. | 850. | 11.2 | -6.8 | 2.7 | 298.4 | .8 |
| 1847. | 700. | -2.1 | -12.1 | 2.2 | 300.6 | 1.4 |
| 2327. | 659. | -5.5 | -12.5 | 2.2 | 300.8 | .6 |
| 2515. | 643. | -7.9 | -17.9 | 1.4 | 301.2 | 2.1 |
| 2574. | 638. | -7.3 | -22.3 | 1.0 | 302.5 | 21.4 |
| 2771. | 622. | -6.7 | -36.7 | .3 | 305.3 | 14.0 |
| 4433. | 500. | -20.3 | -50.3 | .1 | 308.3 | 1.8 |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | |
|----------|----------|------------|-------|
| 17/02/77 | 17:00:00 | SLC | |
| HEIGHT | WIND DIR | WIND SPEED | DU/DZ |
| (M) | (DEG) | (MPS) | (*10) |
| 0. | 300.0 | 3.1 | .000 |
| 267. | 310.0 | 3.1 | .018 |
| 542. | 315.0 | 3.6 | .052 |
| 847. | 310.0 | 5.2 | .066 |
| 1151. | 290.0 | 7.2 | .052 |
| 1456. | 280.0 | 8.9 | .050 |
| 1847. | 285.0 | 8.8 | -.050 |
| 2066. | 285.0 | 7.7 | .036 |
| 2371. | 295.0 | 8.8 | .135 |
| 2980. | 315.0 | 17.0 | .016 |
| 3590. | 310.0 | 18.0 | -.009 |
| 4199. | 300.0 | 17.5 | .021 |
| 4433. | 305.0 | 18.0 | |

| RADIOSONDE | | DATE 18/02/77 | TIME 05:00:00 | LOCATION SLC | | |
|------------|-------|---------------|---------------|--------------|---------|---------|
| Z | PRESS | TEMP | DEWPT | MR | THV* | DTMV/DZ |
| (M) | (MB) | (DEG C) | (DEG C) | (GM/KG) | (DEG K) | (*1000) |
| 0. | 980. | 0 | -4.6 | 3.1 | 283.9 | 71.7 |
| 84. | 871. | 5.0 | -5.0 | 3.0 | 289.9 | 19.4 |
| 282. | 850. | 6.8 | -7.2 | 2.6 | 293.7 | 4.3 |
| 1196. | 759. | 1.6 | -11.4 | 2.1 | 297.7 | .9 |
| 1849. | 700. | -4.1 | -14.1 | 1.8 | 298.3 | 2.4 |
| 2700. | 625. | -10.7 | -19.9 | 1.3 | 300.5 | 9.6 |
| 2898. | 612. | -10.9 | -20.9 | 1.2 | 302.0 | 5.7 |
| 3896. | 538. | -15.5 | -31.5 | .5 | 307.7 | 2.0 |
| 4423. | 500. | -19.9 | -49.9 | .1 | 308.8 | |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | |
|----------|----------|------------|-------|
| 18/02/77 | 05:00:00 | SLC | |
| HEIGHT | WIND DIR | WIND SPEED | DU/DZ |
| (M) | (DEG) | (MPS) | (*10) |
| 0. | 110.0 | 1.5 | .060 |
| 282. | 220.0 | 3.2 | -.004 |
| 542. | 320.0 | 3.1 | .102 |
| 847. | 320.0 | 6.2 | .066 |
| 1151. | 310.0 | 8.2 | .069 |
| 1456. | 310.0 | 10.3 | .053 |
| 1849. | 305.0 | 12.4 | .069 |
| 2066. | 305.0 | 13.9 | .016 |
| 2371. | 305.0 | 14.4 | .034 |
| 2980. | 305.0 | 16.5 | .059 |
| 3590. | 310.0 | 20.1 | .086 |
| 4423. | 315.0 | 27.3 | |

| RADIOSONDE | | DATE 18/02/77 | TIME 17:00:00 | LOCATION SLC | | |
|------------|---------------|-----------------|------------------|---------------|-----------------|--------------------|
| Z (M) | PRESS (MB) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTMV/DZ (*1000) |
| 0. | 880. | 15.0 | -7.0 | 2.6 | 299.4 | |
| 104. | 869. | 11.4 | -8.6 | 2.3 | 296.6 | -26.1 |
| 292. | 850. | 9.6 | -9.4 | 2.2 | 296.6 | -1 |
| 1863. | 700. | -3.7 | -16.7 | 1.5 | 298.7 | 1.3 |
| 2782. | 623. | -7.7 | -24.7 | .8 | 304.1 | 5.9 |
| 4453. | 500. | -19.9 | -36.9 | .3 | 308.8 | 2.9 |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | | TIME | PLACE |
|---------------|-------------------|---------------------|----------------|
| 18/02/77 | | 17:00:00 | SLC |
| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | DU/DZ (*10) |
| 0. | 340.0 | 4.6 | |
| 292. | 345.0 | 4.1 | -.017 |
| 542. | 340.0 | 4.1 | .000 |
| 947. | 325.0 | 5.7 | .052 |
| 1151. | 315.0 | 7.2 | .049 |
| 1456. | 315.0 | 6.7 | -.016 |
| 1863. | 320.0 | 7.2 | .012 |
| 2066. | 325.0 | 8.9 | .079 |
| 2371. | 325.0 | 11.3 | .062 |
| 2380. | 320.0 | 16.5 | .085 |
| 3590. | 325.0 | 20.6 | .067 |
| 4199. | 310.0 | 25.7 | .084 |
| 4453. | 310.0 | 25.7 | .000 |

| PADICSCNDE | DATE | 24/02/77 | TIME | 05:00:00 | LOCATION | SLC |
|------------|-------|----------|---------|----------|----------|---------|
| Z | PRESS | TEMP | DENFT | MR | THV* | STHV/DZ |
| (M) | (MB) | (DEG C) | (DEG C) | (GM/KG) | (DEG K) | (*1000) |
| 0. | 867. | 1.6 | -5.4 | 2.9 | 286.7 | -16.0 |
| 66. | 860. | .0 | -7.0 | 2.6 | 285.7 | 11.8 |
| 163. | 850. | .2 | -7.8 | 2.5 | 286.8 | .7 |
| 1679. | 700. | -13.5 | -15.7 | 1.6 | 287.8 | .1 |
| 1823. | 597. | -14.9 | -14.9 | 1.7 | 287.8 | 1.8 |
| 2825. | 601. | -22.9 | -23.5 | .9 | 289.7 | -2.9 |
| 2963. | 590. | -24.5 | -30.5 | .5 | 289.3 | 1.8 |
| 3871. | 522. | -31.7 | -38.7 | .3 | 290.8 | 1.6 |
| 4133. | 500. | -34.3 | -40.3 | .2 | 291.3 | |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | | | |
|----------|----------|------------|-------|--|--|
| 24/02/77 | 05:00:30 | SLC | | | |
| HEIGHT | WIND DIR | WIND SPEED | DU/DZ | | |
| (M) | (DEG) | (MPS) | (*10) | | |
| 0. | 300.0 | 2.6 | .190 | | |
| 163. | 280.0 | 5.7 | .333 | | |
| 238. | 265.0 | 8.2 | .053 | | |
| 542. | 260.0 | 9.8 | .016 | | |
| 847. | 265.0 | 10.3 | .000 | | |
| 1151. | 270.0 | 10.3 | .033 | | |
| 1456. | 275.0 | 11.3 | .000 | | |
| 1679. | 280.0 | 11.3 | .045 | | |
| 2371. | 290.0 | 14.4 | -.025 | | |
| 2980. | 280.0 | 12.9 | .043 | | |
| 3590. | 275.0 | 15.5 | .055 | | |
| 4133. | 265.0 | 18.5 | | | |

| RADIOSCNDE | DATE 24/02/77 | TIME 17:00:00 | LOCATION SLC | | | | |
|------------|---------------|-----------------|------------------|---------------|-----------------|--------------------|--|
| Z (M) | PRESS (MB) | TEMP (DEG C) | DENFT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTAV/DZ (*1000) | |
| 0. | 870. | 1.5 | -3.4 | 3.4 | 286.5 | | |
| 84. | 861. | -2.7 | -7.1 | 2.6 | 282.7 | -45.2 | |
| 182. | 850. | -3.7 | -6.9 | 2.7 | 282.7 | .1 | |
| 454. | 821. | -6.3 | -6.8 | 2.8 | 282.8 | .3 | |
| 1681. | 700. | -15.3 | -15.3 | 1.7 | 285.8 | 2.5 | |
| 2048. | 667. | -18.3 | -18.3 | 1.3 | 286.4 | 1.5 | |
| 2985. | 588. | -24.7 | -32.7 | .4 | 289.3 | 3.1 | |
| 4133. | 500. | -34.3 | -39.3 | .2 | 291.3 | 1.7 | |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | | | | |
|---------------|-------------------|---------------------|----------------|--|--|--|
| 24/02/77 | 17:00:00 | SLC | | | | |
| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | DU/DZ (*10) | | | |
| C. | 340.0 | 4.6 | | | | |
| 182. | 340.0 | 4.6 | .600 | | | |
| 542. | 320.0 | 5.2 | .017 | | | |
| 847. | 305.0 | 7.7 | .082 | | | |
| 1151. | 300.0 | 6.2 | -.049 | | | |
| 1456. | 300.0 | 9.8 | .118 | | | |
| 1681. | 295.0 | 9.3 | -.022 | | | |
| 2371. | 290.0 | 6.7 | -.038 | | | |
| 2980. | 290.0 | 9.8 | .051 | | | |
| 3283. | 290.0 | 9.3 | -.017 | | | |
| 3590. | 300.0 | 8.2 | -.036 | | | |
| 4133. | 315.0 | 7.2 | -.018 | | | |
| 4199. | 315.0 | 6.2 | -.152 | | | |

| RADIOSONDE | | DATE 25/02/77 | TIME 05:00:00 | LOCATION SLC | | |
|------------|---------------|-----------------|------------------|---------------|-----------------|--------------------|
| Z (M) | PRESS (MB) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (CEG K) | DT4V/DZ (*1000) |
| 0. | 870. | -4.5 | -6.7 | 2.7 | 280.0 | |
| 187. | 850. | -5.7 | -8.0 | 2.5 | 280.6 | 3.1 |
| 664. | 800. | -8.1 | -14.1 | 1.6 | 282.8 | 4.6 |
| 1177. | 749. | -12.3 | -14.1 | 1.7 | 283.6 | 1.6 |
| 1477. | 720. | -13.9 | -19.9 | 1.1 | 285.0 | 4.5 |
| 1683. | 700. | -15.5 | -21.5 | 1.0 | 285.5 | 2.5 |
| 3038. | 583. | -26.5 | -32.0 | .4 | 287.9 | 1.8 |
| 3596. | 539. | -30.5 | -40.5 | .2 | 289.6 | 3.1 |
| 4123. | 500. | -35.3 | -40.2 | .2 | 290.1 | .8 |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | | TIME | PLACE | |
|---------------|-------------------|---------------------|----------------|--|
| 25/02/77 | | 05:00:00 | SLC | |
| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | DU/DZ (*10) | |
| 0. | 320.0 | 3.6 | | |
| 187. | 345.0 | 4.6 | .053 | |
| 542. | 355.0 | 6.7 | .059 | |
| 847. | 360.0 | 6.2 | -.016 | |
| 1151. | 10.0 | 5.2 | -.033 | |
| 1456. | 30.0 | 7.2 | .066 | |
| 1693. | 25.0 | 8.2 | .044 | |
| 2371. | 360.0 | 9.8 | .023 | |
| 2980. | 20.0 | 12.9 | .051 | |
| 3590. | 360.0 | 10.8 | -.034 | |
| 4123. | 355.0 | 9.3 | -.028 | |

| RADIOSONDE | | DATE | 25/02/77 | TIME | 17:00:00 | LOCATION | | SLC |
|------------|-------|---------|----------|---------|----------|----------|--|-----|
| Z | PRESS | TEMP | DEWPT | MR | THV* | DTMV/DZ | | |
| (M) | (MB) | (DEG C) | (DEG C) | (CM/KG) | (DEG K) | (*1000) | | |
| 0. | 875. | 3.2 | -5.8 | 2.8 | 287.6 | -53.2 | | |
| 73. | 867. | -1.1 | -11.1 | 1.9 | 283.7 | -1 | | |
| 232. | 850. | -2.7 | -9.7 | 2.1 | 283.7 | 2 | | |
| 811. | 789. | -8.3 | -10.2 | 2.2 | 283.9 | 2.2 | | |
| 1262. | 744. | -11.7 | -15.8 | 1.5 | 284.8 | .1 | | |
| 1575. | 714. | -14.7 | -17.2 | 1.4 | 284.8 | 4.1 | | |
| 1734. | 700. | -15.5 | -21.5 | 1.0 | 285.5 | 5.9 | | |
| 1871. | 687. | -16.1 | -26.1 | .7 | 286.3 | 1.6 | | |
| 2151. | 661. | -18.5 | -29.5 | .5 | 286.8 | 14.2 | | |
| 2265. | 651. | -18.1 | -48.1 | .1 | 288.4 | 1.3 | | |
| 3731. | 535. | -30.5 | -43.5 | .1 | 290.2 | 9.3 | | |
| 4211. | 500. | -31.5 | -44.5 | .1 | 294.7 | | | |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | | |
|----------|----------|------------|-------|--|
| 25/02/77 | 17:00:00 | SLC | | |
| HEIGHT | WIND DIR | WIND SPEED | DU/DZ | |
| (M) | (DEG) | (MPS) | (*10) | |
| 0. | 330.0 | 5.7 | | |
| 232. | 320.0 | 5.2 | -.022 | |
| 542. | 330.0 | 4.6 | -.019 | |
| 847. | 335.0 | 8.2 | .118 | |
| 1151. | 330.0 | 8.8 | .020 | |
| 1456. | 325.0 | 8.8 | .000 | |
| 1734. | 335.0 | 8.8 | .000 | |
| 2371. | 340.0 | 7.7 | -.017 | |
| 2980. | 330.0 | 11.3 | .059 | |
| 3590. | 335.0 | 12.4 | .018 | |
| 4193. | 350.0 | 18.0 | .093 | |

| RADIOSONDE | | DATE 28/02/77 | TIME 05:00:00 | LOCATION SLC | | |
|------------|---------------|-----------------|------------------|---------------|-----------------|--------------------|
| Z (M) | PRESS (MB) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTAV/DZ (*1000) |
| 0. | 878. | -7 | -6.7 | 2.6 | 283.2 | 12.9 |
| 259. | 850. | 0 | -8.0 | 2.5 | 286.6 | 6.1 |
| 742. | 820. | -1.3 | -9.9 | 2.2 | 289.5 | 1.2 |
| 1375. | 738. | -7.5 | -8.0 | 2.8 | 290.3 | 4.3 |
| 1789. | 700. | -9.7 | -14.5 | 1.8 | 292.1 | 2.4 |
| 2078. | 674. | -11.9 | -15.7 | 1.7 | 292.8 | 4.4 |
| 2543. | 634. | -14.5 | -23.5 | .9 | 294.8 | 9.8 |
| 2603. | 629. | -14.5 | -31.5 | .4 | 295.4 | 10.6 |
| 2908. | 604. | -14.7 | -31.7 | .4 | 298.6 | 7.1 |
| 3450. | 562. | -16.7 | -32.7 | .4 | 302.5 | 1.7 |
| 3892. | 529. | -20.5 | -30.5 | .6 | 303.2 | 4.0 |
| 4323. | 500. | -23.1 | -34.1 | .4 | 305.0 | |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | |
|----------|----------|------------|-------|
| 28/02/77 | 05:00:00 | SLC | |
| HEIGHT | WIND DIR | WIND SPEED | DU/DZ |
| (M) | (DEG) | (MPS) | (*10) |
| 0. | 140.0 | 4.6 | .218 |
| 238. | 170.0 | 9.8 | .000 |
| 259. | 170.0 | 9.8 | -.110 |
| 542. | 180.0 | 6.7 | -.118 |
| 847. | 195.0 | 3.1 | -.033 |
| 1151. | 245.0 | 2.1 | .049 |
| 1456. | 290.0 | 3.6 | .102 |
| 1761. | 285.0 | 0.7 | .000 |
| 1789. | 285.0 | 6.7 | .036 |
| 2066. | 275.0 | 7.7 | .052 |
| 2371. | 285.0 | 9.3 | .067 |
| 2980. | 300.0 | 13.4 | .007 |
| 4323. | 300.0 | 14.4 | |

| RADIOSONDE | DATE | 28/02/77 | TIME | 17:00:00 | LOCATION | SLC | |
|------------|-------|----------|---------|----------|----------|---------|--|
| Z | PRESS | TEMP | DEWPT | MR | THV* | OTHV/DZ | |
| (M) | (MB) | (DEG C) | (DEG C) | (GM/KG) | (DEG K) | (*1000) | |
| 0. | 870. | 10.0 | -7.0 | 2.6 | 295.1 | -10.2 | |
| 94. | 860. | 8.2 | -8.8 | 2.3 | 294.2 | .1 | |
| 1476. | 850. | 7.4 | -9.6 | 2.2 | 294.3 | -0.9 | |
| 1961. | 800. | 2.2 | -11.8 | 1.9 | 293.9 | -17.4 | |
| 1749. | 700. | -4.7 | -17.7 | 1.4 | 297.5 | .7 | |
| 2653. | 623. | -12.9 | -19.9 | 1.3 | 298.2 | 3.7 | |
| 3289. | 573. | -17.1 | -17.6 | 1.7 | 300.6 | 1.5 | |
| 3584. | 551. | -13.5 | -21.8 | 1.2 | 301.0 | 2.9 | |
| 3805. | 535. | -21.1 | -22.1 | 1.2 | 301.7 | 8.6 | |
| 3903. | 528. | -21.3 | -25.4 | .9 | 302.5 | .2 | |
| 4293. | 500. | -25.1 | -30.0 | .6 | 302.8 | | |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | |
|----------|----------|------------|-------|
| 28/02/77 | 17:00:00 | SLC | |
| HEIGHT | WIND DIR | WIND SPEED | DU/DZ |
| (M) | (DEG) | (MPS) | (*10) |
| 0. | 170.0 | 8.2 | .000 |
| 189. | 170.0 | 8.2 | .074 |
| 542. | 170.0 | 10.8 | .033 |
| 847. | 180.0 | 11.8 | -.066 |
| 1151. | 195.0 | 9.8 | -.069 |
| 1456. | 210.0 | 7.7 | .017 |
| 1749. | 220.0 | 8.2 | .000 |
| 2066. | 225.0 | 8.2 | .020 |
| 2371. | 230.0 | 9.8 | .041 |
| 2980. | 260.0 | 11.3 | .034 |
| 3590. | 255.0 | 13.4 | .058 |
| 4293. | 250.0 | 17.5 | |

| RADIOSONDE | | DATE 01/03/77 | TIME 05:00:00 | LOCATION SLC | | |
|------------|---------------|-----------------|------------------|---------------|-----------------|--------------------|
| Z (M) | PRESS (MB) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTMV/DZ (*1000) |
| 0. | 863. | 2.2 | -3.8 | 3.3 | 287.8 | |
| 118. | 850. | -5 | -5.5 | 3.0 | 286.2 | -13.9 |
| 609. | 800. | -4.1 | -7.3 | 2.8 | 287.3 | 2.3 |
| 730. | 788. | -3.3 | -8.3 | 2.6 | 289.3 | 17.2 |
| 1646. | 700. | -9.5 | -14.5 | 1.8 | 292.3 | 3.2 |
| 2203. | 651. | -13.9 | -18.6 | 1.3 | 293.4 | 1.9 |
| 2706. | 609. | -17.7 | -18.4 | 1.5 | 294.7 | 2.6 |
| 3439. | 552. | -22.3 | -24.1 | 1.0 | 297.5 | 3.9 |
| 4153. | 500. | -28.1 | -29.2 | .7 | 298.9 | 2.0 |

* VIRTUAL POTENTIAL TEMPERATURE

D-18

| DATE | TIME | PLACE | |
|---------------|-------------------|---------------------|----------------|
| 01/03/77 | 05:00:00 | SLC | |
| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | DU/DZ (*10) |
| 0. | 320.0 | 4.6 | |
| 118. | 310.0 | 6.7 | .178 |
| 238. | 295.0 | 8.8 | .175 |
| 542. | 300.0 | 9.3 | .016 |
| 847. | 310.0 | 8.8 | -.016 |
| 1151. | 275.0 | 5.7 | -.102 |
| 1456. | 190.0 | 5.7 | .000 |
| 1646. | 190.0 | 7.2 | .079 |
| 2371. | 185.0 | 11.8 | .063 |
| 2676. | 185.0 | 11.9 | .000 |
| 2980. | 190.0 | 13.4 | .053 |
| 3590. | 195.0 | 16.3 | .043 |
| 4153. | 205.0 | 19.6 | .064 |

| RADIOSONDE | DATE 01/03/77 | TIME 17:00:00 | LOCATION SLC | | | | |
|------------|---------------|-----------------|------------------|---------------|-----------------|--------------------|--|
| Z (M) | PRESS (MB) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTFV/DZ (*1000) | |
| 0. | 852. | .6 | -2.5 | 3.7 | 286.3 | | |
| 108. | 850. | -1.9 | -5.5 | 3.0 | 284.7 | -14.7 | |
| 583. | 800. | -6.1 | -7.2 | 2.8 | 285.1 | 1.0 | |
| 1620. | 700. | -13.1 | -14.7 | 1.7 | 288.3 | 3.1 | |
| 2094. | 658. | -16.5 | -18.0 | 1.4 | 289.5 | 2.6 | |
| 3126. | 574. | -23.7 | -29.7 | .6 | 292.5 | 2.8 | |
| 3986. | 511. | -31.1 | -36.1 | .3 | 293.4 | 1.0 | |
| 4093. | 500. | -32.3 | -40.3 | .2 | 293.7 | 3.2 | |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | | | | |
|---------------|-------------------|---------------------|----------------|--|--|--|
| 01/03/77 | 17:00:00 | SLC | | | | |
| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | DU/DZ (*10) | | | |
| 0. | 280.0 | 4.6 | | | | |
| 108. | 275.0 | 4.6 | .000 | | | |
| 542. | 300.0 | 5.7 | .025 | | | |
| 847. | 310.0 | 6.7 | .033 | | | |
| 1151. | 290.0 | 4.6 | -.069 | | | |
| 1456. | 285.0 | 3.6 | -.033 | | | |
| 1620. | 275.0 | 4.1 | .030 | | | |
| 2371. | 250.0 | 4.1 | .000 | | | |
| 2676. | 220.0 | 6.7 | .085 | | | |
| 2980. | 220.0 | 8.2 | .049 | | | |
| 3590. | 210.0 | 8.8 | .010 | | | |
| 4093. | 200.0 | 10.3 | .030 | | | |

| RADIOSONDE | DATE 02/03/77 | TIME 05:00:00 | LOCATION SLC | | | |
|------------|---------------|-----------------|------------------|---------------|-----------------|-------------------|
| Z (M) | PRESS (MS) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTM/DZ (*1000) |
| 0. | 850. | -2.9 | -4.0 | 3.3 | 282.7 | |
| 92. | 850. | -4.3 | -4.3 | 3.3 | 282.2 | -5.7 |
| 1600. | 700. | -13.1 | -13.1 | 2.0 | 288.3 | 4.1 |
| 4073. | 500. | -31.5 | -34.1 | .4 | 294.7 | 2.6 |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | |
|----------|----------|------------|-------|
| 02/03/77 | 05:00:00 | SLC | |
| HEIGHT | WIND DIR | WIND SPEED | DU/DZ |
| (M) | (DEG) | (MPS) | (*10) |
| 0. | 140.0 | 2.6 | .054 |
| 92. | 85.0 | 3.1 | .069 |
| 542. | 325.0 | 6.2 | .033 |
| 847. | 315.0 | 7.2 | .000 |
| 1151. | 310.0 | 7.2 | .000 |
| 1456. | 325.0 | 7.2 | .035 |
| 1600. | 325.0 | 7.7 | .027 |
| 2371. | 335.0 | 9.8 | -.016 |
| 2980. | 350.0 | 8.9 | -.036 |
| 3283. | 355.0 | 7.7 | -.016 |
| 3590. | 25.0 | 7.2 | -.064 |
| 4073. | 70.0 | 4.1 | |

ARMY DUGWAY PROVING GROUND UTAH F/G 4/2
TURBULENCE MEASUREMENTS ON A FORTY-EIGHT METER TOWER IN DESERT --ETC(U)
OCT 77 A W WALDRON

F/G 4/2

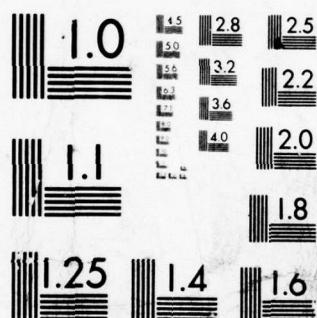
NL

AD
A049036

100

END
DATE
FILMED
2-78
DDC

2-78



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

| RADIOSONDE | | DATE 02/03/77 | TIME 17:00:00 | LOCATION SLC | | |
|------------|---------------|-----------------|------------------|---------------|-----------------|--------------------|
| Z (M) | PRESS (MB) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEC K) | DTHV/DZ (*1000) |
| 0. | 866. | .C | -2.7 | 3.6 | 285.3 | |
| 146. | 850. | -2.1 | -5.3 | 3.0 | 284.5 | -5.4 |
| 416. | 821. | -4.5 | -4.9 | 3.2 | 284.8 | 1.2 |
| 895. | 770. | -7.9 | -9.0 | 2.5 | 286.3 | 3.1 |
| 1658. | 700. | -13.3 | -14.3 | 1.8 | 288.1 | 2.4 |
| 3073. | 579. | -21.9 | -21.9 | 1.1 | 294.0 | 4.2 |
| 3405. | 553. | -23.7 | -28.7 | .6 | 295.6 | 5.0 |
| 3656. | 534. | -25.5 | -31.5 | .5 | 296.4 | 3.2 |
| 3960. | 512. | -27.7 | -28.8 | .7 | 297.4 | 3.1 |
| 4143. | 500. | -28.5 | -39.5 | .2 | 298.3 | 5.3 |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | |
|---------------|-------------------|---------------------|----------------|
| 02/03/77 | 17:00:00 | SLC | |
| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | DU/DZ (*10) |
| C. | 10.0 | 2.1 | |
| 146. | 340.0 | 3.1 | .068 |
| 542. | 320.0 | 6.7 | .091 |
| 847. | 330.0 | 11.9 | .167 |
| 1151. | 335.0 | 14.4 | .386 |
| 1456. | 335.0 | 14.9 | .016 |
| 1658. | 335.0 | 13.9 | -.050 |
| 2371. | 350.0 | 13.9 | .000 |
| 2980. | 355.0 | 11.8 | -.034 |
| 3590. | 355.0 | 13.4 | .026 |
| 4143. | 5.0 | 14.9 | .027 |

| RADIOSONDE | DATE | 03/03/77 | TIME | 05:00:00 | LOCATION | SLC |
|------------|-------|----------|---------|----------|----------|---------|
| Z | PRESS | TEMP | DEPHT | MR | THV* | CTHV/DZ |
| (M) | (MB) | (DEG C) | (DEG C) | (GM/KG) | (DEG K) | (*1000) |
| C. | 867. | -1.7 | -4.4 | 3.2 | 283.3 | |
| 157. | 850. | -3.3 | -7.9 | 2.5 | 283.1 | -1.2 |
| 1303. | 735. | -11.7 | -11.8 | 2.1 | 285.9 | 2.4 |
| 1662. | 700. | -14.3 | -14.7 | 1.7 | 287.0 | 3.0 |
| 2319. | 642. | -19.1 | -19.2 | 1.3 | 288.6 | 2.5 |
| 2470. | 629. | -19.3 | -20.0 | 1.2 | 290.1 | 9.6 |
| 2721. | 608. | -19.9 | -23.9 | .5 | 292.1 | 8.0 |
| 4133. | 500. | -30.5 | -45.5 | .1 | 295.9 | 2.7 |

D-22

| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | CU/DZ (*10) |
|---------------|-------------------|---------------------|----------------|
| 0. | 310.0 | 3.1 | .000 |
| 157. | 310.0 | 3.1 | -.026 |
| 542. | 325.0 | 2.1 | .016 |
| 847. | 330.0 | 2.6 | .016 |
| 1151. | 310.0 | 3.1 | .016 |
| 1456. | 310.0 | 3.6 | .024 |
| 1662. | 310.0 | 3.1 | .037 |
| 2371. | 330.0 | 5.7 | .043 |
| 2676. | 330.0 | 7.2 | .033 |
| 2980. | 325.0 | 8.2 | -.016 |
| 3590. | 315.0 | 7.2 | .018 |
| 4133. | 305.0 | 8.2 | |

| RADIOSCNDE | DATE | 03/03/77 | TIME | 17:00:00 | LOCATION | SLC |
|------------|-------|----------|---------|----------|----------|---------|
| Z | PRESS | TEMP | DEWPT | MR | THV* | DTFV/DZ |
| (M) | (MB) | (DEG C) | (DEG C) | (GM/KG) | (DEG K) | (*1000) |
| 0. | 868. | 2.8 | -7.2 | 2.6 | 287.8 | -12.0 |
| 172. | 850. | -7.7 | -11.7 | 1.8 | 285.7 | 1.8 |
| 814. | 783. | -5.9 | -14.9 | 1.5 | 286.9 | .9 |
| 1686. | 700. | -13.7 | -14.4 | 1.8 | 287.6 | 1.5 |
| 1805. | 689. | -14.7 | -15.2 | 1.7 | 287.8 | 7.0 |
| 1937. | 677. | -15.1 | -19.4 | 1.2 | 288.7 | 2.9 |
| 2891. | 596. | -21.9 | -23.2 | 1.0 | 291.5 | 3.7 |
| 3645. | 537. | -26.9 | -28.5 | .7 | 294.3 | 6.0 |
| 4163. | 500. | -29.3 | -34.0 | .4 | 297.4 | |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | |
|----------|----------|------------|-------|
| 03/03/77 | 17:00:00 | SLC | |
| HEIGHT | WIND DIR | WIND SPEED | DU/DZ |
| (M) | (DEG) | (MPS) | (*10) |
| 0. | 340.0 | 3.1 | .000 |
| 172. | 5.0 | 3.1 | .027 |
| 542. | 355.0 | 4.1 | .069 |
| 847. | 325.0 | 6.2 | .016 |
| 1151. | 315.0 | 6.7 | -.016 |
| 1456. | 310.0 | 6.2 | -.022 |
| 1686. | 320.0 | 5.7 | -.016 |
| 2371. | 340.0 | 4.6 | .018 |
| 2980. | 335.0 | 5.7 | .000 |
| 3283. | 345.0 | 5.7 | .033 |
| 3590. | 335.0 | 6.7 | .037 |
| 4163. | 305.0 | 8.3 | |

| RADIOSONDE | | DATE 04/03/77 | TIME 05:00:00 | LOCATION SLC | | |
|------------|-------|---------------|---------------|--------------|---------|---------|
| Z | PRESS | TEMP | DEWPT | MR | THV* | QTHV/QZ |
| (M) | (MB) | (DEG C) | (DEG C) | (GM/KG) | (DEG K) | (*1000) |
| 0. | 871. | -1.1 | -3.8 | 3.3 | 283.6 | -3.5 |
| 74. | 863. | -2.1 | -3.0 | 3.5 | 283.3 | 3.0 |
| 198. | 850. | -2.9 | -3.5 | 3.5 | 283.7 | 1.7 |
| 568. | 800. | -6.7 | -6.8 | 2.9 | 284.5 | 3.3 |
| 942. | 772. | -8.5 | -8.8 | 2.5 | 285.4 | 2.6 |
| 1174. | 749. | -10.1 | -13.4 | 1.8 | 286.0 | 2.5 |
| 1705. | 700. | -13.9 | -15.9 | 1.6 | 287.4 | 2.1 |
| 2152. | 659. | -17.5 | -17.8 | 1.4 | 288.3 | 1.8 |
| 2862. | 598. | -23.3 | -27.9 | .6 | 289.6 | 1.0 |
| 3197. | 571. | -26.3 | -26.5 | .8 | 289.9 | 6.0 |
| 3548. | 544. | -27.9 | -31.9 | .5 | 292.0 | 3.2 |
| 4163. | 500. | -32.1 | -39.1 | .3 | 294.0 | |

D-24

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | |
|----------|----------|------------|-------|
| 04/03/77 | 05:00:00 | SLC | |
| HEIGHT | WIND DIR | WIND SPEED | DU/DZ |
| (M) | (DEG) | (MPS) | (*10) |
| 0. | 50.0 | 1.5 | .030 |
| 198. | 355.0 | 2.1 | .058 |
| 542. | 350.0 | 4.1 | .102 |
| 847. | 350.0 | 7.2 | .053 |
| 1151. | 340.0 | 8.8 | .000 |
| 1456. | 330.0 | 8.8 | .000 |
| 1705. | 335.0 | 8.8 | .015 |
| 2371. | 340.0 | 9.8 | .008 |
| 2980. | 335.0 | 10.3 | .059 |
| 3590. | 340.0 | 13.9 | .091 |
| 4163. | 345.0 | 19.1 | |

| RADIOSCND | | DATE 04/03/77 | | TIME 17:00:00 | | LOCATION SLC | |
|-----------|---------------|-----------------|------------------|---------------|-----------------|-------------------|--|
| Z (M) | PRESS (MB) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTW/DZ (*1000) | |
| 0. | 876. | 2.2 | -6.8 | 2.6 | 286.4 | -16.1 | |
| 92. | 866. | .C | -11.0 | 1.9 | 285.0 | 1.1 | |
| 243. | 850. | -1.3 | -11.3 | 1.9 | 285.1 | .5 | |
| 1073. | 765. | -8.9 | -14.9 | 1.6 | 285.6 | .1 | |
| 1489. | 725. | -12.9 | -15.3 | 1.6 | 285.6 | 6.8 | |
| 1660. | 709. | -13.5 | -16.0 | 1.5 | 286.8 | 10.9 | |
| 1752. | 700. | -13.5 | -18.5 | 1.3 | 287.8 | 6.8 | |
| 1993. | 678. | -14.3 | -25.3 | .7 | 289.4 | 2.5 | |
| 3647. | 543. | -26.7 | -41.7 | .2 | 293.5 | 2.5 | |
| 3987. | 518. | -29.3 | -37.3 | .3 | 294.4 | 3.2 | |
| 4233. | 500. | -31.1 | -40.1 | .2 | 295.2 | | |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | |
|---------------|-------------------|---------------------|----------------|
| 04/03/77 | 17:00:00 | SLC | |
| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MFS) | DU/DZ (*10) |
| 0. | 260.0 | 4.1 | .021 |
| 243. | 270.0 | 4.6 | -.050 |
| 542. | 305.0 | 3.1 | .016 |
| 847. | 330.0 | 3.6 | .016 |
| 1151. | 340.0 | 4.1 | .016 |
| 1456. | 360.0 | 6.2 | .069 |
| 1752. | 5.0 | 6.7 | .017 |
| 2066. | 15.0 | 6.7 | .000 |
| 2371. | 15.0 | 6.7 | .000 |
| 2676. | 5.0 | 7.2 | .016 |
| 2980. | 10.0 | 9.8 | .086 |
| 3590. | 15.0 | 12.9 | .051 |
| 4233. | 20.0 | 17.0 | .064 |

RADIOSONDE DATE 07/03/77 TIME 05:00:00 LOCATION SLC

| Z (M) | PRESS (MB) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | QTHV/DZ (*1000) |
|----------|---------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 876. | 2.2 | -4.8 | 3.1 | 286.5 | |
| 84. | 867. | 5.6 | -6.4 | 2.7 | 290.9 | 51.3 |
| 244. | 850. | 6.6 | -9.4 | 2.2 | 293.5 | 16.3 |
| 398. | 834. | 7.2 | -9.8 | 2.2 | 295.7 | 14.5 |
| 624. | 811. | 5.4 | -13.6 | 1.6 | 296.1 | 1.6 |
| 885. | 785. | 5.8 | -13.2 | 1.8 | 299.3 | 12.3 |
| 1821. | 700. | -1.9 | -16.9 | 1.4 | 300.7 | 1.5 |
| 2210. | 666. | -5.7 | -18.7 | 1.3 | 300.7 | .0 |
| 3110. | 593. | -13.1 | -19.1 | 1.4 | 302.2 | 1.7 |
| 3331. | 576. | -14.5 | -28.5 | .6 | 303.0 | 3.3 |
| 3449. | 567. | -13.5 | -43.5 | .1 | 305.4 | 20.7 |
| 3726. | 546. | -15.9 | -45.9 | .1 | 305.9 | 1.6 |
| 4393. | 500. | -21.5 | -29.5 | .7 | 307.0 | 1.6 |

D-26

| DATE 07/03/77 | TIME 05:00:00 | PLACE SLC | VIRTUAL POTENTIAL TEMPERATURE | |
|------------------|-------------------|---------------------|-------------------------------|--|
| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | DU/DZ (*10) | |
| 0. | 150.0 | 5.7 | | |
| 244. | 170.0 | 11.8 | .250 | |
| 542. | 180.0 | 13.4 | .054 | |
| 847. | 200.0 | 8.8 | -.151 | |
| 1151. | 220.0 | 6.7 | -.069 | |
| 1456. | 235.0 | 8.2 | .049 | |
| 1761. | 245.0 | 9.3 | .036 | |
| 1821. | 245.0 | 9.3 | .000 | |
| 2371. | 245.0 | 10.8 | .027 | |
| 2980. | 255.0 | 10.8 | .000 | |
| 3590. | 260.0 | 13.3 | .051 | |
| 4199. | 270.0 | 17.0 | .051 | |
| 4393. | 265.0 | 17.3 | .000 | |

| RADIOSONDE | | DATE 07/03/77 | TIME 17:00:00 | LOCATION SLC | |
|------------|-------|---------------|---------------|--------------|---------|
| Z | PRESS | TEMP | DEWPT | MR | THV* |
| (M) | (MB) | (DEG C) | (DEG C) | (GM/KG) | (DEG K) |
| 0. | 873. | 14.4 | -1.6 | 3.9 | 299.7 |
| 226. | 850. | 12.8 | -9.2 | 2.2 | 300.0 |
| 1815. | 700. | -9 | -17.9 | 1.3 | 301.7 |
| 3737. | 552. | -16.5 | -28.5 | .7 | 304.3 |
| 4393. | 500. | -22.3 | -35.3 | .4 | 305.9 |
| | | | | | |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | |
|----------|----------|------------|-------|
| 07/03/77 | 17:00:00 | SLC | |
| HEIGHT | WIND DIR | WIND SPEED | DU/DZ |
| (M) | (DEG) | (MPS) | (*10) |
| 0. | 200.0 | 7.7 | .181 |
| 226. | 190.0 | 11.8 | 1.750 |
| 238. | 185.0 | 13.9 | -.049 |
| 542. | 190.0 | 12.4 | -.138 |
| 847. | 200.0 | 8.2 | -.118 |
| 1151. | 200.0 | 4.6 | -.016 |
| 1456. | 225.0 | 4.1 | .085 |
| 1761. | 235.0 | 6.7 | .185 |
| 1815. | 235.0 | 7.7 | .112 |
| 2371. | 245.0 | 13.9 | .076 |
| 2980. | 245.0 | 18.5 | .034 |
| 3590. | 250.0 | 20.6 | .026 |
| 4393. | 260.0 | 22.7 | |

| RADIOSONDE | | DATE 08/03/77 | TIME 05:00:00 | LOCATION SLC | | |
|------------|---------------|-----------------|------------------|---------------|-----------------|--------------------|
| Z (M) | PRESS (MB) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | OTHV/DZ (*1000) |
| 0. | 670. | 9.4 | -8.6 | 2.3 | 294.5 | |
| 194. | 850. | 10.8 | -11.2 | 1.9 | 297.8 | 17.3 |
| 232. | 846. | 11.2 | -18.8 | 1.0 | 298.5 | 17.2 |
| 947. | 773. | 7.2 | -22.8 | .8 | 301.9 | 4.3 |
| 1786. | 700. | -2.2 | -30.3 | .4 | 302.2 | .4 |
| 3019. | 601. | -9.7 | -24.7 | .9 | 304.9 | 2.2 |
| 4373. | 500. | -23.1 | -33.1 | .5 | 305.0 | .0 |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | |
|---------------|-------------------|---------------------|----------------|
| 08/03/77 | 05:00:00 | SLC | |
| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | DU/DZ (*10) |
| 0. | 180.0 | 9.3 | .237 |
| 194. | 185.0 | 13.9 | .818 |
| 239. | 185.0 | 17.5 | -.188 |
| 542. | 195.0 | 11.8 | -.134 |
| 847. | 215.0 | 7.7 | -.016 |
| 1151. | 240.0 | 7.2 | .069 |
| 1456. | 245.0 | 9.3 | .076 |
| 1786. | 250.0 | 11.8 | .057 |
| 2065. | 255.0 | 13.4 | .102 |
| 2371. | 250.0 | 16.5 | .059 |
| 2980. | 235.0 | 20.1 | .033 |
| 3283. | 235.0 | 21.1 | .015 |
| 4373. | 245.0 | 22.7 | |

| RADIOSONDE | | DATE 08/03/77 | TIME 17:00:00 | LOCATION SLC | | |
|------------|---------------|-----------------|------------------|---------------|-----------------|--------------------|
| Z (M) | PRESS (MB) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | STHV/DZ (*1000) |
| 0. | 873. | 13.2 | -4.8 | 3.1 | 298.3 | |
| 116. | 861. | 9.8 | -11.2 | 1.9 | 295.7 | -22.4 |
| 223. | 850. | 9.6 | -11.2 | 1.9 | 295.7 | .4 |
| 1788. | 700. | -4.9 | -34.9 | .3 | 297.1 | .9 |
| 3036. | 598. | -11.3 | -41.3 | .2 | 303.4 | 5.0 |
| 4353. | 500. | -22.5 | -52.5 | .1 | 305.6 | 1.7 |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | |
|---------------|-------------------|---------------------|----------------|
| 08/03/77 | 17:00:00 | SLC | |
| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | DU/DZ (*10) |
| C. | 150.0 | 2.6 | |
| 223. | 190.0 | 2.1 | -.022 |
| 542. | 175.0 | 2.1 | .000 |
| 847. | 160.0 | 2.6 | .016 |
| 1151. | 165.0 | 2.1 | -.016 |
| 1456. | 210.0 | 2.1 | .000 |
| 1788. | 250.0 | 3.6 | .045 |
| 2371. | 270.0 | 6.2 | .045 |
| 2980. | 270.0 | 10.3 | .067 |
| 3590. | 290.0 | 11.8 | .025 |
| 3895. | 295.0 | 11.3 | -.016 |
| 4353. | 295.0 | 15.5 | .032 |

| RADIOSONDE | | DATE 09/03/77 | TIME 05:00:00 | LOCATION SLC | | |
|------------|---------------|-----------------|------------------|---------------|-----------------|--------------------|
| Z (M) | PRESS (MB) | TEMP (DEG C) | DEWPT (DEG C) | MR (CM/KC) | THV* (DEG K) | DTHV/DZ (*1000) |
| 0. | 866. | 6.0 | -5.0 | 3.0 | 291.4 | 8.0 |
| 150. | 850. | 5.8 | -9.2 | 2.2 | 292.6 | 26.5 |
| 355. | 829. | 9.0 | -11.0 | 2.0 | 298.1 | 6.0 |
| 909. | 774. | 6.8 | -23.2 | .8 | 301.4 | 1.3 |
| 1736. | 700. | -1.1 | -30.1 | .4 | 302.5 | 1.0 |
| 2447. | 638. | -6.7 | -24.7 | .8 | 303.2 | .8 |
| 4213. | 500. | -23.5 | -25.0 | 1.0 | 304.6 | |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | |
|---------------|-------------------|---------------------|----------------|
| 09/03/77 | 05:00:00 | SLC | |
| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | CU/DZ (*10) |
| 0. | 140.0 | 6.7 | .380 |
| 150. | 155.0 | 12.4 | .466 |
| 238. | 165.0 | 16.5 | .033 |
| 542. | 175.0 | 17.5 | -.102 |
| 847. | 200.0 | 14.4 | -.016 |
| 1151. | 215.0 | 13.9 | .052 |
| 1456. | 225.0 | 15.5 | .054 |
| 1736. | 235.0 | 17.0 | .000 |
| 1761. | 235.0 | 17.3 | -.008 |
| 2371. | 235.0 | 16.5 | -.008 |
| 2980. | 230.0 | 16.3 | .025 |
| 3590. | 225.0 | 17.5 | -.007 |
| 4313. | 225.0 | 17.3 | |

| RADIOSONDE | | DATE 09/03/77 | TIME 17:00:00 | LOCATION SLC | | |
|------------|---------------|-----------------|------------------|---------------|-----------------|--------------------|
| Z (M) | PRESS (MB) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTHV/DZ (*1000) |
| C. | 856. | 15.0 | -6.0 | 2.8 | 301.8 | |
| 57. | 950. | 12.4 | -8.6 | 2.3 | 299.5 | -38.8 |
| 561. | 800. | 8.6 | -12.4 | 1.8 | 300.7 | 2.2 |
| 1646. | 700. | -1.3 | -16.3 | 1.5 | 301.3 | .6 |
| 2770. | 608. | -11.7 | -19.7 | 1.3 | 301.7 | .3 |
| 4213. | 500. | -24.3 | -24.9 | 1.0 | 302.9 | .8 |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | |
|---------------|-------------------|---------------------|----------------|
| 09/03/77 | 17:00:00 | SLC | |
| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | DU/DZ (*10) |
| C. | 30.0 | 5.2 | -.105 |
| 57. | 20.0 | 4.6 | .064 |
| 542. | 280.0 | 7.7 | .102 |
| 847. | 270.0 | 13.8 | .033 |
| 1151. | 275.0 | 11.8 | -.200 |
| 1456. | 270.0 | 5.7 | -.058 |
| 1646. | 230.0 | 4.6 | .722 |
| 1761. | 220.0 | 12.3 | -.018 |
| 2371. | 215.0 | 11.8 | .010 |
| 2980. | 215.0 | 12.4 | .059 |
| 3590. | 215.0 | 16.0 | .041 |
| 4139. | 215.0 | 18.5 | .429 |
| 4213. | 215.0 | 19.1 | |

| RADIOSONDE | DATE | 10/03/77 | TIME | 05:00:00 | LOCATION | SLC |
|------------|---------------|-----------------|------------------|---------------|-----------------|--------------------|
| Z (M) | PRESS (MB) | TEMP (DEG C) | DENFT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTAV/DZ (*1000) |
| 0. | 865. | -1.7 | -3.9 | 3.3 | 283.5 | -9.8 |
| 139. | 850. | -4.3 | -5.5 | 3.0 | 282.2 | 2.3 |
| 1638. | 700. | -15.5 | -15.8 | 1.6 | 285.6 | 2.1 |
| 3708. | 536. | -30.7 | -32.6 | .5 | 289.9 | 15.5 |
| 3875. | 524. | -30.1 | -34.6 | .4 | 292.5 | 11.3 |
| 4093. | 500. | -31.3 | -38.3 | .3 | 294.9 | |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | |
|---------------|-------------------|---------------------|----------------|
| 10/03/77 | 05:00:00 | SLC | |
| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | CU/DZ (*10) |
| 0. | 360.0 | 6.7 | .223 |
| 139. | 350.0 | 9.8 | .114 |
| 542. | 330.0 | 14.4 | .085 |
| 847. | 330.0 | 17.0 | .033 |
| 1151. | 335.0 | 18.0 | -.016 |
| 1456. | 340.0 | 17.5 | -.032 |
| 1638. | 335.0 | 16.0 | .000 |
| 1761. | 335.0 | 16.0 | -.051 |
| 2371. | 325.0 | 12.9 | .051 |
| 2980. | 315.0 | 16.0 | -.128 |
| 3590. | 320.0 | 8.2 | -.072 |
| 4093. | 295.0 | 4.6 | |

| RADIOSONDE | | DATE 10/03/77 | TIME 17:00:00 | LOCATION SLC | | |
|------------|---------------|-----------------|------------------|---------------|-----------------|--------------------|
| Z (M) | PRESS (MB) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTMV/DZ (*1000) |
| C. | 872. | 2.9 | -4.2 | 3.2 | 287.5 | -10.1 |
| 102. | 861. | 1.0 | -10.0 | 2.1 | 286.5 | -1.2 |
| 207. | 850. | -1.1 | -11.1 | 1.9 | 286.4 | 1.0 |
| 1722. | 700. | -13.5 | -15.1 | 1.7 | 287.8 | .6 |
| 1832. | 690. | -14.5 | -15.4 | 1.7 | 287.9 | 2.4 |
| 2642. | 620. | -20.5 | -25.1 | .8 | 289.8 | 15.3 |
| 2739. | 612. | -20.1 | -31.1 | .5 | 291.3 | 4.3 |
| 3752. | 534. | -26.1 | -35.1 | .4 | 295.7 | 6.8 |
| 3902. | 523. | -26.7 | -39.7 | .2 | 296.7 | 6.0 |
| 3989. | 517. | -27.1 | -36.1 | .3 | 297.2 | 21.3 |
| 4203. | 500. | -25.7 | -34.7 | .4 | 301.8 | |

| DATE | TIME | PLACE | * VIRTUAL POTENTIAL TEMPERATURE | |
|---------------|-------------------|---------------------|---------------------------------|--|
| 10/03/77 | 17:00:00 | SLC | | |
| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | DU/DZ (*10) | |
| 0. | 340.0 | 12.3 | | |
| 207. | 330.0 | 14.4 | .072 | |
| 239. | 325.0 | 14.3 | .161 | |
| 542. | 325.0 | 17.5 | .086 | |
| 847. | 325.0 | 18.3 | .016 | |
| 1151. | 330.0 | 17.5 | -.016 | |
| 1456. | 345.0 | 16.5 | -.033 | |
| 1722. | 355.0 | 14.9 | -.060 | |
| 2371. | 10.0 | 12.4 | -.039 | |
| 2980. | 25.0 | 15.5 | .051 | |
| 3590. | 760.0 | 12.3 | -.043 | |
| 3895. | 350.0 | 7.2 | -.187 | |
| 4199. | 360.0 | 6.2 | -.033 | |
| 4207. | 260.0 | 6.7 | 1.050 | |

| RADIOSONDE | DATE 11/03/77 | TIME 05:00:00 | LOCATION SLC | | | | | |
|------------|---------------|-----------------|------------------|---------------|-----------------|--------------------|--|--|
| Z (M) | PRESS (MB) | TEMP (DEG C) | DEWPT (DEG C) | MR (CM/KG) | THV* (DEG K) | DTMV/DZ (*1000) | | |
| 0. | 878. | -1.7 | -6.1 | 2.8 | 282.2 | | | |
| 257. | 850. | -2.7 | -9.7 | 2.1 | 283.7 | 5.7 | | |
| 460. | 828. | -3.3 | -13.3 | 1.7 | 285.1 | 7.0 | | |
| 1767. | 700. | -13.9 | -17.6 | 1.4 | 287.3 | 1.7 | | |
| 2380. | 544. | -18.5 | -20.5 | 1.2 | 289.0 | 2.7 | | |
| 2656. | 620. | -19.5 | -22.8 | 1.0 | 291.0 | 7.2 | | |
| 2788. | 609. | -19.1 | -23.1 | .6 | 292.9 | 14.2 | | |
| 3415. | 561. | -22.1 | -52.1 | .1 | 296.2 | 5.3 | | |
| 3550. | 551. | -21.1 | -37.1 | .3 | 299.0 | 20.5 | | |
| 4263. | 500. | -25.9 | -40.3 | .2 | 301.5 | 3.6 | | |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | | | | | |
|---------------|-------------------|---------------------|----------------|--|--|--|--|
| 11/03/77 | 05:00:00 | SLC | | | | | |
| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | DU/DZ (*10) | | | | |
| 0. | 360.0 | 2.6 | | | | | |
| 257. | 5.0 | 1.5 | | | | | |
| 542. | 50.0 | 2.1 | | | | | |
| 847. | 35.0 | 3.1 | | | | | |
| 1151. | 20.0 | 5.2 | | | | | |
| 1456. | 15.0 | 6.7 | | | | | |
| 1761. | 15.0 | 6.7 | | | | | |
| 1767. | 15.0 | 6.2 | | | | | |
| 2371. | 345.0 | 7.7 | | | | | |
| 2980. | 360.0 | 10.3 | | | | | |
| 3590. | 30.0 | 6.2 | | | | | |
| 4199. | 295.0 | 5.7 | | | | | |
| 4263. | 300.0 | 5.7 | | | | | |

| RADIOSONDE | | DATE 11/03/77 | TIME 17:00:00 | LOCATION SLC | | |
|------------|---------------|-----------------|------------------|---------------|-----------------|--------------------|
| Z (M) | PRESS (MB) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTMV/DZ (*1000) |
| 0. | 879. | 5.6 | -5.4 | 2.9 | 289.7 | -36.7 |
| 92. | 869. | 1.6 | -10.4 | 2.0 | 286.4 | -1.1 |
| 270. | 850. | -3 | -11.3 | 1.9 | 286.2 | 1.0 |
| 1122. | 762. | -7.9 | -12.6 | 1.9 | 287.0 | 4.3 |
| 1500. | 725. | -10.1 | -16.1 | 1.5 | 288.7 | 11.3 |
| 1691. | 707. | -9.9 | -26.9 | .6 | 290.8 | 14.6 |
| 1727. | 700. | -10.1 | -40.1 | .2 | 291.3 | 5.1 |
| 2262. | 652. | -12.5 | -42.5 | .1 | 294.6 | 17.2 |
| 2737. | 612. | -10.1 | -40.1 | .2 | 302.8 | 6.8 |
| 3940. | 521. | -15.1 | -45.1 | .1 | 311.0 | 1.2 |
| 4353. | 500. | -17.7 | -47.7 | .1 | 311.5 | |

D-35

| DATE | | TIME | PLACE | * VIRTUAL POTENTIAL TEMPERATURE | |
|---------------|-------------------|---------------------|----------------|---------------------------------|--|
| 11/03/77 | | 17:00:00 | SLC | | |
| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | DU/DZ (*10) | | |
| 0. | 300.0 | 6.2 | | | |
| 238. | 295.0 | 5.7 | -.021 | | |
| 270. | 295.0 | 5.7 | .000 | | |
| 542. | 310.0 | 5.2 | -.018 | | |
| 847. | 360.0 | 4.6 | -.020 | | |
| 1151. | 45.0 | 4.1 | -.016 | | |
| 1456. | 40.0 | 4.6 | .016 | | |
| 1787. | 5.0 | 4.6 | .000 | | |
| 2066. | 5.0 | 6.2 | .057 | | |
| 2371. | 15.0 | 9.8 | .118 | | |
| 2980. | 20.0 | 19.1 | .153 | | |
| 3283. | 20.0 | 20.1 | .033 | | |
| 3590. | 10.0 | 23.1 | .098 | | |
| 4353. | 5.0 | 23.1 | .000 | | |

RADIOSONDE DATE 14/03/77 TIME 05:00:00 LOCATION SLC

| Z (M) | PRESS (MB) | TEMP (DEG C) | DEWPT (DEG C) | MR (CM/KG) | TMV* (DEG K) | PTHV/DZ (*1000) |
|----------|---------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 866. | -5.1 | -6.8 | 2.6 | 279.8 | 21.7 |
| 144. | 850. | -3.5 | -3.5 | 2.4 | 282.9 | 4.2 |
| 420. | 821. | -5.1 | -3.1 | 2.5 | 284.1 | 3.2 |
| 359. | 767. | -3.5 | -15.5 | 1.5 | 285.8 | .9 |
| 1651. | 700. | -14.7 | -21.7 | 1.0 | 286.4 | .0 |
| 1992. | 670. | -17.9 | -22.9 | .9 | 287.3 | 9.8 |
| 2085. | 662. | -17.0 | -23.9 | .5 | 288.9 | 4.9 |
| 2407. | 635. | -19.5 | -35.5 | .3 | 290.3 | 1.5 |
| 3335. | 563. | -26.9 | -37.9 | .4 | 290.3 | 1.4 |
| 3781. | 531. | -30.5 | -34.2 | .3 | 291.8 | 2.8 |
| 4103. | 500. | -33.9 | -36.5 | .3 | | |

* VIRTUAL POTENTIAL TEMPERATURE

D-36

DATE 14/03/77 TIME 05:00:00 PLACE SLC

| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | DU/DZ (*10) |
|---------------|-------------------|---------------------|----------------|
| 0. | 180.0 | 2.6 | |
| 144. | 180.0 | 1.5 | -.076 |
| 542. | 295.0 | 1.3 | -.013 |
| 847. | 350.0 | 1.5 | .016 |
| 1151. | 340.0 | 2.1 | .020 |
| 1456. | 325.0 | 2.6 | .016 |
| 1651. | 320.0 | 2.6 | .030 |
| 2066. | 285.0 | 7.7 | .123 |
| 2371. | 280.0 | 9.3 | .052 |
| 2980. | 285.0 | 11.8 | .041 |
| 3590. | 250.0 | 15.5 | .061 |
| 4103. | 230.0 | 19.1 | .070 |

| RADIO SCNDE | | DATE 14/03/77 | TIME 17:00:00 | LOCATION SLC | |
|-------------|-------|---------------|---------------|--------------|---------|
| Z | PRESS | TEMP | DENFT | MR | THV* |
| (M) | (MB) | (DEG C) | (DEG C) | (GM/KG) | (DEG K) |
| 0. | 870. | 3.8 | -7.2 | 2.6 | 288.7 |
| 93. | 860. | -5 | -13.5 | 1.6 | 284.9 |
| 190. | 850. | -1.3 | -14.3 | 1.5 | 285.1 |
| 1132. | 754. | -10.9 | -15.6 | 1.5 | 284.6 |
| 1285. | 739. | -11.1 | -21.1 | 1.0 | 285.9 |
| 1696. | 700. | -15.1 | -25.1 | .7 | 285.9 |
| 1980. | 674. | -17.5 | -24.5 | .8 | 286.3 |
| 2508. | 628. | -21.9 | -33.9 | .3 | 287.1 |
| 4143. | 500. | -33.9 | -46.9 | .1 | 291.7 |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | | |
|----------|----------|------------|--------|--|
| 14/03/77 | 17:00:00 | SLC | | |
| HEIGHT | WIND DIR | WIND SPEED | DU/DZ | |
| (M) | (DEG) | (MPS) | (°/10) | |
| 0. | 320.0 | 3.6 | | |
| 190. | 340.0 | 2.6 | | |
| 542. | 350.0 | 3.1 | | |
| 847. | 325.0 | 3.6 | | |
| 1151. | 295.0 | 4.8 | | |
| 1455. | 270.0 | 6.7 | | |
| 1696. | 270.0 | 7.2 | | |
| 2371. | 260.0 | 8.3 | | |
| 2980. | 265.0 | 11.8 | | |
| 3590. | 260.0 | 14.4 | | |
| 3895. | 260.0 | 16.5 | | |
| 4143. | 270.0 | 17.5 | | |

| RADIOSONDE | | DATE 15/03/77 | TIME 05:00:00 | LOCATION SLC | | |
|------------|---------------|-----------------|------------------|---------------|-----------------|--------------------|
| Z (M) | PRESS (MB) | TEMP (DEG C) | DEWPT (DEG C) | MO (GM/KG) | THV* (DEG K) | DTWV/DZ (*1000) |
| 0. | 872. | -7 | -8.7 | 2.3 | 283.7 | |
| 92. | 862. | -7 | -13.7 | 1.5 | 284.5 | 8.3 |
| 208. | 850. | -1.1 | -19.1 | 1.0 | 285.2 | 5.4 |
| 682. | 800. | -4.3 | -18.3 | 1.1 | 286.8 | 7.4 |
| 1727. | 700. | -12.3 | -21.3 | 1.0 | 289.0 | 2.2 |
| 2552. | 628. | -19.9 | -22.6 | 1.0 | 289.5 | .5 |
| 2966. | 594. | -22.9 | -25.9 | .8 | 290.6 | 2.7 |
| 3505. | 552. | -25.3 | -34.3 | .4 | 293.3 | 6.0 |
| 4203. | 500. | -29.9 | -33.3 | .5 | 296.7 | 4.1 |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | | | |
|----------|----------|------------|-------|--|-------|
| 15/03/77 | 05:00:00 | SLC | | | |
| HEIGHT | WIND DIR | WIND SPEED | DU/DZ | | |
| (M) | (DEG) | (MPS) | (*10) | | |
| 0. | 160.0 | 4.6 | | | .053 |
| 208. | 155.0 | 5.7 | | | -.015 |
| 542. | 150.0 | 5.2 | | | .049 |
| 847. | 165.0 | 6.7 | | | .096 |
| 1151. | 180.0 | 9.3 | | | .000 |
| 1456. | 195.0 | 9.3 | | | -.041 |
| 1727. | 210.0 | 8.2 | | | .009 |
| 2371. | 235.0 | 8.8 | | | .016 |
| 2676. | 260.0 | 9.3 | | | -.016 |
| 2980. | 265.0 | 8.8 | | | .049 |
| 3590. | 225.0 | 11.9 | | | .060 |
| 4203. | 230.0 | 15.5 | | | |

| PADIOSCNDE | DATE | 15/03/77 | TIME | 17:00:00 | LOCATION | SLC | |
|------------|-------|----------|---------|----------|----------|---------|--|
| Z | PRESS | TEMP | DEW'T | MR | THV* | STHV/DZ | |
| (M) | (MB) | (DEG C) | (DEG C) | (GM/KG) | (DEG K) | (*1000) | |
| 0. | 871. | 10.6 | -1.4 | 4.0 | 295.9 | | |
| 202. | 860. | 7.4 | -13.6 | 1.5 | 293.2 | -13.4 | |
| 297. | 950. | 6.4 | -14.6 | 1.4 | 293.1 | -9.9 | |
| 1748. | 700. | -9.3 | -22.3 | .9 | 292.4 | -5.5 | |
| 2668. | 621. | -17.5 | -22.5 | 1.0 | 293.2 | .9 | |
| 3229. | 576. | -19.7 | -30.7 | .5 | 296.9 | 6.6 | |
| 3664. | 543. | -20.9 | -24.3 | 1.0 | 300.5 | 9.5 | |
| 4263. | 500. | -24.7 | -28.8 | .7 | 303.1 | 4.2 | |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | |
|----------|----------|------------|-------|
| 17/03/77 | 17:00:00 | SLC | |
| HEIGHT | WIND DIR | WIND SPEED | DU/DZ |
| (M) | (DEG) | (MPS) | (*10) |
| 0. | 300.0 | 3.1 | .000 |
| 267. | 310.0 | 3.1 | .018 |
| 542. | 315.0 | 3.0 | .052 |
| 847. | 310.0 | 5.2 | .066 |
| 1151. | 290.0 | 7.2 | .052 |
| 1456. | 280.0 | 8.8 | .000 |
| 1847. | 285.0 | 8.8 | -.050 |
| 2066. | 285.0 | 7.7 | .036 |
| 2371. | 295.0 | 8.9 | .135 |
| 2980. | 315.0 | 17.0 | .016 |
| 3590. | 310.0 | 18.3 | -.008 |
| 4199. | 300.0 | 17.5 | .021 |
| 4433. | 305.0 | 18.3 | |

| RADIOSONDE | | DATE 16/03/77 | TIME 05:00:00 | LOCATION SLC | | |
|------------|---------------|-----------------|------------------|---------------|-----------------|--------------------|
| Z (M) | PRESS (MB) | TEMP (DEC C) | DEWPT (DEC C) | MR (GM/KC) | THV* (DEC K) | OTHV/DZ (*1000) |
| C. | 869. | -7 | -4.6 | 3.1 | 284.2 | |
| 56. | 863. | 1.6 | -8.4 | 2.3 | 287.0 | 50.5 |
| 176. | 850. | 2.8 | -10.2 | 2.1 | 289.5 | 20.5 |
| 279. | 839. | 3.0 | -13.0 | 1.7 | 290.7 | 11.9 |
| 927. | 772. | -1 | -17.1 | 1.3 | 294.3 | 5.5 |
| 1724. | 700. | -7.3 | -22.3 | .9 | 294.6 | .4 |
| 2818. | 606. | -15.7 | -28.7 | .6 | 297.2 | 2.4 |
| 3092. | 584. | -17.5 | -23.5 | 1.0 | 298.4 | 4.1 |
| 3637. | 542. | -21.3 | -51.3 | .1 | 300.1 | 7.2 |
| 3868. | 525. | -22.9 | -33.9 | .4 | 301.0 | 7.8 |
| 3978. | 517. | -23.5 | -39.5 | .2 | 301.5 | 5.2 |
| 4253. | 500. | -25.0 | -38.2 | .3 | 302.6 | 7.9 |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | |
|---------------|-------------------|---------------------|----------------|
| 16/03/77 | 05:00:00 | SLC | |
| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | DU/DZ (*10) |
| 0. | 140.0 | 3.1 | .000 |
| 176. | 170.0 | 3.1 | .057 |
| 542. | 170.0 | 5.2 | .098 |
| 847. | 180.0 | 8.2 | .000 |
| 1151. | 195.0 | 8.2 | -.016 |
| 1456. | 205.0 | 7.7 | .061 |
| 1719. | 210.0 | 9.3 | .118 |
| 2371. | 220.0 | 17.0 | .034 |
| 2980. | 215.0 | 19.1 | .016 |
| 3590. | 230.0 | 20.1 | .178 |
| 4253. | 225.0 | 31.9 | |

| RADIOSONDE | DATE 16/03/77 | TIME 17:00:00 | LOCATION CLC | | | | |
|------------|---------------|---------------|--------------|---------|---------|---------|-------|
| Z | PRESS | TEMP | DWPT | MR | THV* | STAV/CZ | |
| (M) | (MB) | (DEG C) | (DEG C) | (CM/KG) | (DEG K) | (*1000) | |
| 0. | 852. | 8.3 | -10.2 | 2.0 | 294.5 | | |
| 112. | 850. | 6.0 | -13.0 | 1.6 | 292.7 | | -16.3 |
| 1668. | 700. | -5.3 | -19.3 | 1.2 | 296.8 | | 2.5 |
| 4207. | 500. | -26.1 | -28.0 | .8 | 301.4 | | 1.8 |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | | | | |
|----------|----------|------------|-------|--|--|--|
| 16/03/77 | 17:00:00 | CLC | | | | |
| HEIGHT | WIND DIR | WIND SPEED | DU/CZ | | | |
| (M) | (DEG) | (MPS) | (*10) | | | |
| 0. | 350.0 | 7.2 | | | | |
| 112. | 345.0 | 7.2 | | | | |
| 542. | 320.0 | 7.2 | | | | |
| 847. | 320.0 | 6.2 | | | | |
| 1151. | 275.0 | 4.5 | | | | |
| 1456. | 215.0 | 8.8 | | | | |
| 1658. | 215.0 | 11.3 | | | | |
| 2371. | 215.0 | 16.5 | | | | |
| 2980. | 210.0 | 22.7 | | | | |
| 3287. | 210.0 | 24.2 | | | | |
| 3590. | 210.0 | 24.7 | | | | |
| 4207. | 215.0 | 27.2 | | | | |

| RADIOSONDE | | DATE 17/03/77 | TIME 05:00:00 | LOCATION SLC | | |
|------------|---------------|-----------------|------------------|---------------|-----------------|--------------------|
| Z (M) | PRESS (MB) | TEMP (DEC C) | DEWPT (DEC C) | MR (CM/KC) | THV* (DEC K) | DT4V/DZ (*1000) |
| 0. | 857. | 4.4 | -5.6 | 2.9 | 290.6 | |
| 72. | 353. | 4.0 | -8.0 | 2.5 | 290.3 | 2.5 |
| 1618. | 700. | -7.7 | -15.8 | 1.6 | 294.3 | 2.2 |
| 2373. | 673. | -15.3 | -16.3 | 1.7 | 294.2 | -0.1 |
| 3565. | 543. | -23.7 | -24.2 | 1.0 | 297.2 | 2.6 |
| 4039. | 510. | -26.7 | -30.2 | .6 | 298.9 | 3.5 |
| 4133. | 500. | -28.2 | -31.3 | .6 | 298.6 | -2.8 |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | | TIME | PLACE |
|---------------|-------------------|---------------------|----------------|
| 17/03/77 | | 05:00:00 | SLC |
| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | DU/DZ (*10) |
| 0. | 170.0 | 4.6 | |
| 72. | 170.0 | 6.2 | .222 |
| 542. | 170.0 | 10.3 | .087 |
| 847. | 170.0 | 7.2 | -.102 |
| 1151. | 175.0 | 3.6 | -.118 |
| 1456. | 215.0 | 2.6 | -.033 |
| 1618. | 245.0 | 3.1 | .031 |
| 2371. | 290.0 | 7.2 | .054 |
| 2676. | 285.0 | 8.2 | .033 |
| 2980. | 290.0 | 8.2 | .000 |
| 3283. | 300.0 | 8.2 | .000 |
| 3590. | 295.0 | 9.2 | .036 |
| 4133. | 280.0 | 10.3 | .018 |

RADIOSONDE DATE 17/03/77 TIME 17:00:00 LOCATION SLC

| Z (M) | PRESS (MB) | TEMP (DEC C) | DEWPT (DEC C) | MR (CM/KG) | THV* (CEG K) | DTW/DZ (*1000) |
|----------|---------------|-----------------|------------------|---------------|-----------------|-------------------|
| 0. | 866. | 1.0 | -2.4 | 3.7 | 286.3 | |
| 84. | 957. | .6 | -6.4 | 2.8 | 286.5 | 3.2 |
| 153. | 950. | -.3 | -5.3 | 2.8 | 286.3 | -7.8 |
| 524. | 800. | -4.7 | -7.6 | 2.7 | 286.5 | .5 |
| 1124. | 749. | -8.1 | -13.1 | 1.9 | 288.2 | 3.2 |
| 1668. | 700. | -12.9 | -16.3 | 1.5 | 288.5 | .5 |
| 1970. | 672. | -13.3 | -22.9 | .9 | 290.6 | 7.1 |
| 2185. | 653. | -14.3 | -21.9 | 1.0 | 291.9 | 5.3 |
| 2348. | 639. | -15.9 | -18.5 | 1.4 | 292.7 | 4.6 |
| 2681. | 611. | -17.3 | -23.3 | 1.0 | 294.7 | 6.3 |
| 4163. | 500. | -29.8 | -32.2 | .5 | 296.8 | 1.4 |

DATE 17/03/77 TIME 17:00:00 PLACE SLC * VIRTUAL POTENTIAL TEMPERATURE

| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | DU/DZ (*10) |
|---------------|-------------------|---------------------|----------------|
| 0. | 300.0 | 6.1 | |
| 267. | 310.0 | 3.1 | -.112 |
| 542. | 315.0 | 3.6 | .013 |
| 847. | 310.0 | 5.2 | .052 |
| 1151. | 290.0 | 7.2 | .066 |
| 1456. | 280.0 | 8.8 | .052 |
| 1947. | 285.0 | 8.3 | .000 |
| 2066. | 285.0 | 7.7 | -.050 |
| 2371. | 235.0 | 8.9 | .036 |
| 2980. | 315.0 | 17.0 | .135 |
| 3590. | 310.0 | 18.3 | .016 |
| 4199. | 300.0 | 17.5 | -.008 |
| 4433. | 305.0 | 18.3 | .021 |

| RADIOSONDE | | DATE 18/03/77 | TIME 05:00:00 | LOCATION SLC | | |
|------------|---------------|-----------------|------------------|---------------|-----------------|--------------------|
| Z (M) | PRESS (MB) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | OTHV/DZ (*1000) |
| C. | 866. | 1.0 | -7.0 | 2.6 | 286.1 | -12.1 |
| 169. | 850. | -2.3 | -10.3 | 2.0 | 284.1 | .3 |
| 914. | 774. | -9.3 | -10.5 | 2.2 | 284.3 | 1.2 |
| 1483. | 719. | -14.1 | -14.6 | 1.7 | 285.0 | 1.9 |
| 1670. | 700. | -15.7 | -17.5 | 1.4 | 285.3 | 1.8 |
| 3617. | 540. | -31.1 | -33.1 | .4 | 288.8 | 9.0 |
| 3819. | 525. | -31.5 | -40.5 | .2 | 290.6 | 12.2 |
| 4113. | 500. | -31.9 | -45.9 | .1 | 294.2 | |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | |
|---------------|-------------------|---------------------|----------------|
| 18/03/77 | 05:00:00 | SLC | |
| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | DU/DZ (*10) |
| C. | 290.0 | 8.2 | .125 |
| 169. | 295.0 | 10.3 | .070 |
| 542. | 295.0 | 12.9 | -.016 |
| 947. | 295.0 | 12.4 | -.020 |
| 1151. | 295.0 | 11.8 | -.033 |
| 1456. | 295.0 | 10.3 | -.023 |
| 1670. | 295.0 | 10.3 | -.014 |
| 2371. | 265.0 | 9.3 | .041 |
| 2980. | 245.0 | 11.8 | .000 |
| 3283. | 240.0 | 11.8 | .020 |
| 3590. | 250.0 | 12.4 | .059 |
| 4113. | 270.0 | 15.5 | .000 |
| 4199. | 270.0 | 15.5 | |

| RADIOSONDE | | DATE 18/03/77 | TIME 17:00:00 | LOCATION SLC | | |
|------------|-------|---------------|---------------|--------------|---------|---------|
| Z | PRESS | TEMP | DEWPT | MR | THV* | DTMV/DZ |
| (M) | (HE) | (DEG C) | (DEG C) | (CM/KC) | (DEG K) | (*1000) |
| 0. | 870. | 5.0 | -8.0 | 2.4 | 289.9 | -35.7 |
| 84. | 861. | 1.4 | -11.6 | 1.8 | 286.9 | -2.2 |
| 189. | 850. | .2 | -12.8 | 1.7 | 286.7 | .4 |
| 1279. | 741. | -9.3 | -13.3 | 1.8 | 287.1 | 1.0 |
| 1704. | 700. | -12.7 | -16.6 | 1.5 | 287.6 | 1.8 |
| 2280. | 649. | -18.3 | -19.9 | 1.2 | 288.6 | 2.2 |
| 3283. | 568. | -25.9 | -28.2 | .7 | 290.8 | 5.0 |
| 3894. | 523. | -29.1 | -33.1 | .4 | 293.8 | 4.7 |
| 4173. | 500. | -31.1 | -45.1 | .1 | 295.2 | |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | |
|----------|----------|------------|-------|
| 18/03/77 | 17:00:00 | SLC | |
| HEIGHT | WIND DIR | WIND SPEED | DU/DZ |
| (M) | (DEG) | (MPS) | (*10) |
| 0. | 240.0 | 6.7 | .000 |
| 189. | 265.0 | 6.7 | .000 |
| 238. | 265.0 | 6.7 | .016 |
| 542. | 270.0 | 7.2 | .000 |
| 847. | 265.0 | 7.2 | -.033 |
| 1151. | 275.0 | 8.2 | .118 |
| 1456. | 265.0 | 9.8 | .060 |
| 1704. | 270.0 | 11.2 | .078 |
| 2371. | 290.0 | 16.5 | .025 |
| 2980. | 300.0 | 18.0 | .110 |
| 3590. | 310.0 | 24.7 | .118 |
| 3895. | 315.0 | 28.2 | .000 |
| 4173. | 310.0 | 28.3 | |

| RADIOSONDE | | DATE 21/03/77 | TIME 05:00:00 | LOCATION SLC | | |
|------------|---------------|-----------------|------------------|---------------|-----------------|--------------------|
| Z (M) | PRESS (MB) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | STPV/EZ (*1000) |
| 0. | 875. | 1.3 | -5.0 | 3.0 | 295.4 | 41.7 |
| 64. | 868. | 3.0 | -7.0 | 2.6 | 288.0 | .2 |
| 239. | 950. | 1.4 | -7.6 | 2.5 | 288.1 | 1.2 |
| 1765. | 700. | -11.7 | -14.0 | 1.8 | 289.9 | 1.9 |
| 2675. | 621. | -18.2 | -18.9 | 1.4 | 291.6 | 38.1 |
| 2745. | 615. | -17.3 | -17.3 | 1.6 | 294.3 | 17.9 |
| 2950. | 598. | -16.1 | -23.1 | 1.0 | 298.0 | 7.5 |
| 3300. | 570. | -17.2 | -29.3 | .6 | 300.6 | 6.4 |
| 4293. | 500. | -21.5 | -33.5 | .4 | 306.9 | |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | | | |
|----------|----------|------------|-------|-------|--|
| 21/03/77 | 05:00:00 | SLC | | | |
| HEIGHT | WIND DIR | WIND SPEED | DU/DZ | | |
| (M) | (DEG) | (MPS) | (*10) | | |
| 0. | 130.0 | 3.1 | | -.067 | |
| 239. | 355.0 | 1.5 | | .036 | |
| 542. | 325.0 | 2.6 | | .049 | |
| 847. | 325.0 | 4.1 | | .053 | |
| 1151. | 315.0 | 5.7 | | .220 | |
| 1456. | 305.0 | 12.4 | | .049 | |
| 1765. | 305.0 | 13.9 | | .043 | |
| 2371. | 305.0 | 16.5 | | .092 | |
| 2980. | 325.0 | 22.1 | | .085 | |
| 3590. | 330.0 | 27.3 | | .049 | |
| 3895. | 330.0 | 28.8 | | .000 | |
| 4293. | 325.0 | 28.8 | | | |

| RADIOSONDE | | DATE 21/03/77 | TIME 17:00:00 | LOCATION SLC | | |
|------------|-------|---------------|---------------|--------------|---------|---------|
| Z | PRESS | TEMP | DEWPT | MR | THV* | DTMV/DZ |
| (M) | (MB) | (DEC C) | (DEC C) | (GM/KG) | (DEC K) | (*1000) |
| 0. | 877. | 11.0 | -7.0 | 2.6 | 295.5 | |
| 260. | 850. | 6.6 | -10.4 | 2.0 | 293.4 | -7.9 |
| 1529. | 727. | -4.7 | -11.7 | 2.1 | 294.5 | .8 |
| 1813. | 700. | -5.5 | -13.5 | 1.9 | 296.9 | 3.0 |
| 1979. | 685. | -6.5 | -14.5 | 1.8 | 297.5 | 4.3 |
| 2149. | 670. | -7.1 | -17.1 | .2 | 298.4 | 5.5 |
| 2804. | 615. | -11.7 | -18.7 | 1.4 | 300.7 | 7.6 |
| 3016. | 598. | -13.3 | -30.3 | .5 | 301.1 | 1.9 |
| 4383. | 500. | -20.5 | -50.5 | .1 | 308.1 | 5.1 |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | |
|----------|----------|------------|-------|
| 21/03/77 | 17:00:00 | SLC | |
| HEIGHT | WIND DIR | WIND SPEED | DU/DZ |
| (M) | (DEG) | (MPS) | (*10) |
| 0. | 80.0 | 2.1 | .019 |
| 260. | 50.0 | 2.6 | -.018 |
| 542. | 35.0 | 2.1 | -.052 |
| 847. | 135.0 | .5 | .033 |
| 1151. | 210.0 | 1.5 | .102 |
| 1456. | 255.0 | 4.6 | .118 |
| 1751. | 285.0 | 8.2 | .115 |
| 1813. | 290.0 | 8.8 | .054 |
| 2371. | 305.0 | 11.3 | .042 |
| 2980. | 215.0 | 14.4 | .019 |
| 3590. | 315.0 | 15.5 | .006 |
| 4383. | 710.0 | 16.0 | |

| RADIOSONDE | | DATE 22/03/77 | TIME 05:00:00 | LOCATION SLC | | |
|------------|---------------|-----------------|------------------|---------------|-----------------|--------------------|
| Z (M) | PRESS (MB) | TEMP (DEG C) | DEWPT (DEG C) | MR (CM/KG) | THV* (DEG K) | STHV/DZ (*1000) |
| 0. | 875. | .0 | -4.4 | 3.1 | 284.3 | |
| 104. | 864. | 6.2 | -5.8 | 2.9 | 291.3 | 71.7 |
| 235. | 850. | 5.4 | -7.6 | 2.5 | 292.3 | 3.6 |
| 724. | 800. | 5.0 | -10.0 | 2.2 | 296.9 | 9.5 |
| 1801. | 700. | -4.3 | -14.3 | 1.8 | 298.1 | 1.1 |
| 2689. | 625. | -9.1 | -19.1 | .2 | 302.1 | 4.5 |
| 2838. | 613. | -10.3 | -23.3 | .9 | 302.5 | 2.9 |
| 3261. | 580. | -12.9 | -42.9 | .1 | 304.2 | 3.9 |
| 3366. | 572. | -13.9 | -24.9 | .9 | 304.3 | 1.7 |
| 3565. | 557. | -14.3 | -31.3 | .5 | 306.1 | 8.9 |
| 4383. | 500. | -19.7 | -35.7 | .4 | 309.1 | 3.7 |

* VIRTUAL POTENTIAL TEMPERATURE

DATE 22/03/77 TIME 05:00:00 PLACE SLC

| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | CU/DZ (*10) |
|---------------|-------------------|---------------------|----------------|
| 0. | 150.0 | 5.2 | .043 |
| 235. | 155.0 | 6.2 | -.016 |
| 542. | 175.0 | 5.7 | -.036 |
| 847. | 195.0 | 4.6 | -.066 |
| 1151. | 220.0 | 2.6 | .033 |
| 1456. | 270.0 | 3.6 | .069 |
| 1761. | 290.0 | 5.7 | .375 |
| 1801. | 295.0 | 7.2 | .054 |
| 2371. | 290.0 | 10.3 | .016 |
| 2980. | 300.0 | 11.3 | .069 |
| 3590. | 295.0 | 15.5 | .049 |
| 4199. | 295.0 | 18.5 | .000 |
| 4383. | 295.0 | 18.5 | |

| RADIOSONDE | DATE 22/03/77 | TIME 17:00:00 | LOCATION SLC | | | | |
|------------|---------------|-----------------|-----------------|---------------|-----------------|--------------------|--|
| Z (M) | PRESS (MB) | TEMP (DEG C) | DWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | CTHV/CZ (*1000) | |
| 0. | 871. | 17.6 | 1.8 | 5.0 | 303.6 | | |
| 57. | 861. | 14.8 | -7.2 | 2.6 | 301.0 | -26.7 | |
| 204. | 850. | 14.0 | -7.0 | 2.7 | 301.3 | 2.6 | |
| 1794. | 700. | -1.3 | -17.3 | 1.4 | 301.3 | .0 | |
| 4383. | 500. | -20.3 | -33.3 | .5 | 308.4 | 2.7 | |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | | | | |
|---------------|-------------------|---------------------|----------------|--|--|--|
| 22/03/77 | 17:00:00 | SLC | | | | |
| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | DU/DZ (*10) | | | |
| 0. | 180.0 | 2.1 | | | | |
| 204. | 185.0 | 3.1 | .049 | | | |
| 542. | 190.0 | 5.2 | .062 | | | |
| 347. | 190.0 | 4.1 | -.036 | | | |
| 1151. | 180.0 | 3.1 | -.033 | | | |
| 1456. | 180.0 | 3.1 | .000 | | | |
| 1794. | 180.0 | 4.6 | .044 | | | |
| 2371. | 180.0 | 3.1 | -.026 | | | |
| 2980. | 255.0 | 6.2 | .051 | | | |
| 3590. | 260.0 | 7.7 | .025 | | | |
| 3895. | 260.0 | 8.2 | .016 | | | |
| 4383. | 270.0 | 8.8 | .012 | | | |

RADIOSONDE DATE 23/03/77 TIME 05:00:00 LOCATION SLC

| Z (M) | PRESS (MB) | TEMP (DEG C) | DEPT (DEG C) | MR (GM/KG) | THV* (DEG K) | CTPV/DZ (*1000) |
|----------|---------------|-----------------|-----------------|---------------|-----------------|--------------------|
| 0. | 866. | 5.6 | -5.4 | 2.9 | 291.0 | |
| 154. | 850. | 10.4 | -9.6 | 2.2 | 297.4 | 41.9 |
| 1746. | 700. | 2.0 | -16.0 | 1.6 | 305.0 | 4.7 |
| 3166. | 585. | -10.7 | -23.7 | 1.0 | 306.1 | .8 |
| 4343. | 500. | -20.3 | -35.3 | .4 | 303.4 | 1.9 |

* VIRTUAL POTENTIAL TEMPERATURE

DATE 23/03/77 TIME 05:00:00 PLACE SLC

| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | DU/DZ (*10) |
|---------------|-------------------|---------------------|----------------|
| 0. | 160.0 | 6.7 | |
| 154. | 160.0 | 7.2 | .032 |
| 542. | 165.0 | 7.7 | .013 |
| 847. | 175.0 | 12.4 | .154 |
| 1151. | 185.0 | 13.9 | .049 |
| 1456. | 200.0 | 10.8 | -.102 |
| 1746. | 215.0 | 9.3 | -.052 |
| 2066. | 225.0 | 8.8 | -.016 |
| 2371. | 230.0 | 9.3 | .016 |
| 2676. | 230.0 | 8.2 | -.036 |
| 2980. | 225.0 | 9.2 | .036 |
| 3590. | 210.0 | 12.4 | .051 |
| 4343. | 220.0 | 11.8 | -.008 |

RADIOSONDE DATE 23/03/77 TIME 17:00:00 LOCATION SLC

| Z (M) | PRESS (MB) | TEMP (DEG C) | DEWPT (DEG C) | MR (CM/KG) | THV* (DEG K) | DTMV/DZ (*1000) |
|----------|---------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 858. | 21.0 | -16.0 | 1.3 | 307.6 | |
| 80. | 850. | 18.8 | -11.2 | 1.9 | 306.2 | -17.0 |
| 1695. | 700. | 2.4 | -16.6 | 1.5 | 305.4 | -0.5 |
| 3905. | 533. | -13.3 | -25.3 | .9 | 305.3 | -0.1 |
| 4293. | 500. | -21.5 | -33.5 | .4 | 306.9 | 4.2 |

* VIRTUAL POTENTIAL TEMPERATURE

DATE TIME PLACE
23/03/77 17:00:00 SLC

| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | DU/DZ (*10) |
|---------------|-------------------|---------------------|----------------|
| 0. | 190.0 | 12.4 | |
| 80. | 190.0 | 12.4 | .000 |
| 542. | 195.0 | 13.4 | .022 |
| 847. | 200.0 | 16.5 | .102 |
| 1151. | 200.0 | 16.5 | .000 |
| 1456. | 195.0 | 15.5 | -.033 |
| 1595. | 195.0 | 16.0 | .021 |
| 2371. | 190.0 | 15.5 | -.007 |
| 2980. | 195.0 | 17.0 | .025 |
| 3590. | 195.0 | 18.5 | .025 |
| 3895. | 195.0 | 17.5 | -.033 |
| 4293. | 210.0 | 19.1 | .040 |

| RADIOSCNDE | | DATE | 24/03/77 | TIME | 05:00:00 | LOCATION | SLC | | | | | | |
|------------|-----|-------|----------|-------|----------|----------|---------|-----|---------|-------|---------|--------|---------|
| Z | (M) | PRESS | (MB) | TEMP | (DEG C) | DWPT | (DEG C) | MR | (GM/KG) | THV* | (DEG K) | DTW/CZ | (*1000) |
| 0. | | 864. | | 3.8 | | 1.7 | | 5.0 | | 289.7 | | | |
| 1425. | | 850. | | .8 | | -2 | | 4.4 | | 287.8 | | -1.3 | |
| 1913. | | 800. | | -2.1 | | -3.0 | | 3.8 | | 289.6 | | 3.7 | |
| 2963. | | 700. | | -6.9 | | -7.8 | | 3.0 | | 295.4 | | 5.5 | |
| 3194. | | 679. | | -6.9 | | -7.8 | | 3.1 | | 298.0 | | 11.3 | |
| 4391. | | 582. | | -14.7 | | -16.1 | | 1.9 | | 302.1 | | 3.4 | |
| 5520. | | 500. | | -23.1 | | -25.5 | | 1.0 | | 305.1 | | 2.6 | |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | 24/03/77 | TIME | 05:00:00 | PLACE | SLC | | |
|--------|----------|----------|----------|------------|-------|-------|-------|
| HEIGHT | (M) | WIND DIR | (DEG) | WIND SPEED | (MPS) | DU/CZ | (*10) |
| 0. | | 350.0 | | 7.7 | | | |
| 138. | | 350.0 | | 8.3 | | .080 | |
| 542. | | 335.0 | | 10.8 | | .050 | |
| 847. | | 330.0 | | 9.8 | | -.033 | |
| 1151. | | 335.0 | | 7.2 | | -.086 | |
| 1456. | | 325.0 | | 5.2 | | -.066 | |
| 1676. | | 270.0 | | 4.1 | | -.050 | |
| 2066. | | 210.0 | | 8.2 | | .105 | |
| 2371. | | 205.0 | | 12.4 | | .138 | |
| 2980. | | 220.0 | | 17.5 | | .084 | |
| 3590. | | 230.0 | | 20.6 | | .051 | |
| 4233. | | 230.0 | | 24.7 | | .064 | |

| RADIOSONDE | | DATE | 24/03/77 | TIME | 17:00:00 | LOCATION | | SLC |
|------------|--|-------|----------|---------|----------|----------|---------|-----|
| Z | | PRESS | TEMP | DEWPT | MR | THV* | OTHV/DZ | |
| (M) | | (MB) | (DEG C) | (DEG C) | (CM/KC) | (DEG K) | (*1000) | |
| C. | | 882. | 9.2 | .2 | 4.5 | 294.4 | | |
| 111. | | 850. | 4.8 | -1.2 | 4.1 | 291.9 | -22.1 | |
| 538. | | 806. | .4 | -1.7 | 4.2 | 291.7 | -5 | |
| 757. | | 784. | -.9 | -6.3 | 2.9 | 292.4 | 3.2 | |
| 951. | | 765. | -2.7 | -2.8 | 4.1 | 292.7 | 1.7 | |
| 1659. | | 700. | -6.5 | -7.1 | 3.2 | 295.9 | 4.5 | |
| 3484. | | 550. | -19.3 | -19.6 | 1.5 | 301.5 | 3.1 | |
| 4203. | | 500. | -24.1 | -25.1 | 1.0 | 303.3 | 3.3 | |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | | TIME | PLACE |
|----------|----------|------------|-------|
| 24/03/77 | | 17:00:00 | SLC |
| HEIGHT | WIND DIR | WIND SPEED | DU/DZ |
| (M) | (DEG) | (MPS) | (*10) |
| C. | 340.0 | 4.1 | .000 |
| 111. | 345.0 | 4.1 | -.023 |
| 542. | 10.0 | 3.1 | -.016 |
| 947. | 65.0 | 2.6 | .033 |
| 1151. | 120.0 | 3.6 | .016 |
| 1456. | 170.0 | 4.1 | .079 |
| 1659. | 185.0 | 5.7 | .098 |
| 1761. | 195.0 | 5.7 | .093 |
| 2371. | 195.0 | 12.4 | .076 |
| 2380. | 200.0 | 17.3 | .034 |
| 3590. | 190.0 | 19.1 | .016 |
| 4203. | 205.0 | 20.1 | |

RADIOSONDE DATE 25/03/77 TIME 05:00:00 LOCATION SLC

| Z (M) | PRESS (MB) | TEMP (DEC C) | DEWPT (DEC C) | MR (CM/KG) | THV* (SEC K) | DTMV/DZ (*1000) |
|----------|---------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 856. | 1.8 | .4 | 4.6 | 288.1 | |
| 61. | 850. | .0 | -.3 | 4.2 | 286.9 | -19.2 |
| 546. | 800. | -2.5 | -3.3 | 3.7 | 289.2 | 4.7 |
| 1596. | 700. | -7.9 | -8.3 | 2.8 | 294.2 | 4.3 |
| 3362. | 555. | -18.9 | -20.3 | 1.4 | 301.1 | 7.9 |

* VIRTUAL POTENTIAL TEMPERATURE

DATE 25/03/77 TIME 05:00:00 PLACE SLC

| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | DU/DZ (*10) |
|---------------|-------------------|---------------------|----------------|
| 0. | 140.0 | 2.1 | .000 |
| 61. | 180.0 | 2.1 | .021 |
| 542. | 345.0 | 3.1 | -.016 |
| 847. | 355.0 | 2.6 | -.016 |
| 1151. | 360.0 | 2.1 | -.020 |
| 1456. | 10.0 | 1.5 | .000 |
| 1596. | 20.0 | 1.5 | -.013 |
| 2371. | 15.0 | .5 | .034 |
| 2980. | 210.0 | 6.2 | .075 |
| 3590. | 180.0 | 10.8 | .000 |
| 3895. | 175.0 | 10.9 | -.042 |
| 4133. | 185.0 | 9.8 | |

| RADIOSONDE | | DATE 25/03/77 | TIME 17:00:00 | LOCATION SLC | | |
|------------|---------------|-----------------|------------------|-----------------|-----------------|--------------------|
| Z (M) | PRESS (MB) | TEMP (DEG C) | DEWPT (DEG C) | WIND (CM/KC) | THV* (DEG K) | STHV/DZ (*1000) |
| 0. | 865. | 4.4 | -6 | 4.2 | 295.1 | -18.1 |
| 142. | 850. | .8 | -6.2 | 2.9 | 297.5 | 2.1 |
| 1009. | 762. | -5.9 | -9.3 | 2.5 | 289.3 | 3.5 |
| 1669. | 700. | -10.1 | -16.1 | 1.5 | 291.6 | 3.3 |
| 2039. | 667. | -12.5 | -24.5 | .8 | 292.8 | 3.5 |
| 2361. | 639. | -14.7 | -24.7 | .8 | 293.3 | 3.3 |
| 2550. | 623. | -16.1 | -19.4 | 1.3 | 294.5 | 3.0 |
| 2874. | 596. | -18.5 | -20.4 | 1.3 | 295.5 | 7.0 |
| 4173. | 500. | -27.7 | -31.1 | .6 | 299.4 | |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | |
|---------------|-------------------|---------------------|----------------|
| 25/03/77 | 17:00:00 | SLC | |
| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | DU/DZ (*10) |
| 0. | 130.0 | 2.1 | -0.043 |
| 141. | 150.0 | 1.5 | -0.025 |
| 542. | 10.0 | .5 | .033 |
| 847. | 360.0 | 1.5 | .086 |
| 1151. | 340.0 | 4.1 | .052 |
| 1456. | 335.0 | 5.7 | .023 |
| 1669. | 345.0 | 6.2 | .013 |
| 2066. | 340.0 | 6.7 | -0.049 |
| 2371. | 320.0 | 5.2 | -0.010 |
| 2980. | 280.0 | 4.6 | .053 |
| 3283. | 265.0 | 6.2 | .016 |
| 2590. | 265.0 | 6.7 | -0.036 |
| 4173. | 250.0 | 4.6 | |

| RADIOSONDE | DATE 28/03/77 | TIME 05:00:00 | LOCATION SLC | | | | |
|------------|---------------|-----------------|------------------|---------------|-----------------|--------------------|--|
| Z (M) | PRESS (MB) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | STHV/CZ (*1000) | |
| 0. | 863. | -7 | -3.7 | 2.3 | 284.6 | -9.9 | |
| 117. | 850. | -2.9 | -11.9 | 1.8 | 283.4 | .5 | |
| 943. | 766. | -10.5 | -11.5 | 2.1 | 283.8 | 1.0 | |
| 1616. | 700. | -16.5 | -16.5 | 1.5 | 284.5 | 1.0 | |
| 2331. | 636. | -22.7 | -23.2 | .9 | 285.2 | 1.0 | |
| 2773. | 600. | -26.1 | -28.9 | .6 | 286.0 | 1.8 | |
| 2996. | 592. | -27.3 | -34.3 | .3 | 286.4 | 1.6 | |
| 4043. | 500. | -37.7 | -43.7 | .2 | 267.1 | .7 | |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE 28/03/77 | TIME 05:00:00 | PLACE SLC | | | | |
|------------------|-------------------|---------------------|----------------|--|--|--|
| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | DU/CZ (*10) | | | |
| 0. | 290.0 | 14.4 | | | | |
| 117. | 290.0 | 16.0 | .137 | | | |
| 542. | 300.0 | 16.5 | .012 | | | |
| 847. | 295.0 | 16.5 | .000 | | | |
| 1151. | 295.0 | 16.5 | .000 | | | |
| 1456. | 305.0 | 16.0 | -.016 | | | |
| 1621. | 310.0 | 15.5 | -.030 | | | |
| 2371. | 325.0 | 11.3 | -.056 | | | |
| 2980. | 325.0 | 17.9 | .043 | | | |
| 3590. | 225.0 | 12.9 | -.010 | | | |
| 4043. | 335.0 | 13.5 | .124 | | | |
| 4190. | 335.0 | 14.9 | -.231 | | | |

| RADIOSONDE | | DATE 28/03/77 | TIME 17:00:00 | LOCATION SLC | |
|------------|-------|---------------|---------------|--------------|---------|
| Z | PRESS | TEMP | DENST | MR | THV* |
| (M) | (MB) | (DEG C) | (DEG C) | (GM/KG) | (DEG K) |
| 0. | 865. | .6 | -6.4 | 2.7 | 285.8 |
| 136. | 850. | -2.7 | -9.7 | 2.1 | 283.7 |
| 1639. | 700. | -15.7 | -16.9 | 1.4 | 285.4 |
| 2650. | 612. | -24.7 | -24.9 | .8 | 286.1 |
| 3687. | 531. | -32.9 | -35.8 | .3 | 238.0 |
| 4073. | 500. | -36.7 | -39.4 | .2 | 288.3 |
| | | | | | -15.7 |
| | | | | | 1.1 |
| | | | | | .7 |
| | | | | | 1.9 |
| | | | | | .9 |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | | TIME | PLACE |
|----------|----------|------------|-------|
| 28/03/77 | | 17:00:00 | SLC |
| HEIGHT | WIND DIR | WIND SPEED | DU/DZ |
| (M) | (DEG) | (MPS) | (*10) |
| 0. | 10.0 | 4.1 | .081 |
| 136. | 345.0 | 5.2 | .049 |
| 238. | 325.0 | 5.7 | .056 |
| 542. | 310.0 | 7.7 | .016 |
| 847. | 300.0 | 8.2 | -.016 |
| 1151. | 285.0 | 7.7 | .016 |
| 1456. | 275.0 | 8.2 | .033 |
| 1639. | 275.0 | 8.8 | -.029 |
| 2371. | 280.0 | 6.7 | .000 |
| 2980. | 285.0 | 6.7 | -.017 |
| 3283. | 285.0 | 6.2 | -.033 |
| 3590. | 300.0 | 5.2 | .052 |
| 4073. | 305.0 | 7.7 | |

| RADIOSONDE | | DATE 29/03/77 | TIME 05:00:00 | LOCATION SLC | | |
|------------|---------------|-----------------|------------------|---------------|-----------------|--------------------|
| Z (M) | PRESS (MB) | TEMP (DEG C) | DEWPT (DEG C) | MR (CM/KG) | THV* (DEG K) | DTWV/DZ (*1000) |
| 0. | 863. | -2.9 | -5.1 | 2.0 | 282.4 | |
| 123. | 850. | -5.7 | -6.6 | 2.7 | 280.7 | -14.3 |
| 589. | 800. | -8.3 | -10.5 | 2.1 | 282.7 | 4.4 |
| 1014. | 756. | -12.3 | -12.3 | 2.0 | 282.9 | .5 |
| 1617. | 700. | -16.5 | -16.6 | 1.5 | 284.5 | 2.6 |
| 4043. | 500. | -37.1 | -40.7 | .2 | 287.9 | 1.4 |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | | TIME | PLACE |
|---------------|-------------------|---------------------|----------------|
| 29/03/77 | | 05:00:00 | SLC |
| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | DU/DZ (*10) |
| 0. | 160.0 | 3.1 | |
| 123. | 185.0 | 3.1 | .000 |
| 542. | 270.0 | 7.7 | .110 |
| 847. | 275.0 | 10.8 | .102 |
| 1151. | 280.0 | 9.2 | -.049 |
| 1456. | 290.0 | 9.3 | .016 |
| 1617. | 295.0 | 9.2 | -.031 |
| 2371. | 310.0 | 9.3 | .000 |
| 2980. | 320.0 | 9.3 | .000 |
| 3590. | 320.0 | 8.2 | -.018 |
| 4043. | 315.0 | 7.7 | -.011 |

| RADICSNDE | DATE | 29/03/77 | TIME | 17:00:00 | LOCATION | SLC |
|-----------|-------|----------|---------|----------|----------|---------|
| Z | PRESS | TEMP | DEWPT | MR | THV* | DTHV/DZ |
| (M) | (MB) | (DEG C) | (DEG C) | (GM/KG) | (DEG K) | (*1000) |
| 0. | 865. | 1.3 | -6.0 | 2.3 | 286.3 | -10.6 |
| 143. | 850. | -1.7 | -9.7 | 2.1 | 284.7 | 1.4 |
| 1653. | 700. | -14.3 | -13.3 | 1.2 | 286.9 | 1.5 |
| 1773. | 689. | -15.3 | -19.8 | 1.1 | 287.0 | 1.3 |
| 1873. | 680. | -16.1 | -24.1 | .8 | 287.2 | 1.1 |
| 2302. | 642. | -19.9 | -21.6 | 1.1 | 287.7 | 2.6 |
| 2991. | 585. | -24.9 | -32.9 | .4 | 289.5 | 1.6 |
| 3545. | 542. | -29.5 | -33.7 | .4 | 290.4 | 5.0 |
| 4113. | 500. | -32.7 | -36.9 | .3 | 293.2 | |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | | | |
|----------|----------|------------|-------|---|------|
| 29/03/77 | 17:00:00 | SLC | | | |
| HEIGHT | WIND DIR | WIND SPEED | CU/DZ | | |
| (M) | (DEG) | (MPS) | (*10) | | |
| 0. | 280.0 | 2.1 | | - | .042 |
| 143. | 265.0 | 1.5 | | | .000 |
| 542. | 270.0 | 1.5 | | | .085 |
| 347. | 285.0 | 4.1 | | | .069 |
| 1151. | 290.0 | 6.2 | | | .049 |
| 1455. | 295.0 | 7.7 | | | .025 |
| 1653. | 195.0 | 8.2 | | | .036 |
| 2371. | 290.0 | 10.8 | | | .016 |
| 2676. | 300.0 | 11.3 | | | .016 |
| 2980. | 300.0 | 11.8 | | | .041 |
| 3590. | 295.0 | 9.3 | | - | .050 |
| 4113. | 350.0 | 6.7 | | - | |

| RADIOSONDE | | DATE 30/03/77 | TIME 05:00:00 | LOCATION SLC | | |
|------------|-------|---------------|---------------|--------------|---------|---------|
| Z | PRESS | TEMP | CEMPT | MR | THV* | DTAV/DZ |
| (M) | (MB) | (DEG C) | (DEG C) | (GM/KG) | (DEG K) | (*1000) |
| 0. | 870. | -2.9 | -4.6 | 3.1 | 281.8 | |
| 91. | 860. | -4.7 | -4.3 | 3.2 | 281.2 | -5.6 |
| 185. | 850. | -4.5 | -4.5 | 3.2 | 282.0 | 7.3 |
| 398. | 827. | -5.9 | -7.6 | 2.6 | 282.6 | 3.0 |
| 1568. | 710. | -14.3 | -14.3 | 1.8 | 285.3 | 2.7 |
| 1686. | 700. | -14.7 | -16.1 | 1.5 | 286.5 | 5.7 |
| 1792. | 690. | -15.5 | -17.6 | 1.4 | 286.7 | 2.5 |
| 2460. | 629. | -21.1 | -22.0 | 1.0 | 288.0 | 1.8 |
| 2991. | 586. | -24.7 | -29.7 | .5 | 289.5 | 3.0 |
| 4143. | 500. | -31.1 | -36.1 | .3 | 295.2 | 4.9 |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | |
|----------|----------|------------|-------|
| 30/03/77 | 05:00:00 | SLC | |
| HEIGHT | WIND DIR | WIND SPEED | DU/DZ |
| (M) | (DEG) | (MPS) | (*10) |
| 0. | 190.0 | 2.1 | -.032 |
| 185. | 160.0 | 1.5 | .031 |
| 342. | 180.0 | 2.5 | .066 |
| 847. | 190.0 | 4.6 | .000 |
| 1151. | 210.0 | 4.6 | .000 |
| 1456. | 240.0 | 4.6 | .000 |
| 1686. | 245.0 | 5.7 | .048 |
| 1761. | 245.0 | 5.7 | .000 |
| 2371. | 245.0 | 6.2 | .008 |
| 2980. | 240.0 | 6.7 | .008 |
| 3283. | 240.0 | 5.7 | -.033 |
| 3590. | 265.0 | 3.6 | -.068 |
| 4143. | 280.0 | 2.6 | -.018 |

| RADIOSONDE | | DATE 30/03/77 | TIME 17:00:00 | LOCATION SLC | | |
|------------|---------------|-----------------|------------------|---------------|-----------------|--------------------|
| Z (M) | PRESS (MB) | TEMP (DEG C) | DEWPT (DEG C) | MR (CM/KG) | THV* (DEG K) | DTMV/DZ (*1000) |
| 0. | 871. | 6.0 | -4.0 | 3.3 | 291.0 | |
| 199. | 850. | 2.6 | -11.4 | 1.9 | 289.2 | -8.9 |
| 1735. | 700. | -10.1 | -19.1 | 1.2 | 291.5 | 1.5 |
| 3049. | 591. | -21.3 | -21.9 | 1.1 | 292.9 | 1.1 |
| 3281. | 573. | -23.3 | -24.6 | .9 | 293.2 | .9 |
| 3438. | 561. | -23.7 | -31.7 | .5 | 294.4 | 7.8 |
| 3599. | 549. | -23.7 | -36.7 | .3 | 296.2 | 11.2 |
| 4233. | 500. | -27.9 | -39.9 | .2 | 299.1 | 4.6 |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | |
|---------------|-------------------|---------------------|----------------|
| 30/03/77 | 17:00:00 | SLC | |
| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | DU/DZ (*10) |
| 0. | 10.0 | 5.2 | |
| 199. | 350.0 | 4.6 | -.030 |
| 542. | 5.0 | 2.1 | -.073 |
| 847. | 65.0 | 1.0 | -.036 |
| 1151. | 100.0 | 2.6 | .053 |
| 1456. | 120.0 | 4.1 | .049 |
| 1735. | 140.0 | 5.2 | .039 |
| 1761. | 145.0 | 5.2 | .000 |
| 2371. | 155.0 | 8.8 | .059 |
| 2980. | 180.0 | 13.3 | .084 |
| 3590. | 185.0 | 14.9 | .016 |
| 4233. | 200.0 | 15.5 | .009 |

| RADIOSONDE | | DATE | 31/03/77 | TIME | 05:00:00 | LOCATION | SLC |
|------------|-------|---------|----------|---------|----------|----------|-----|
| Z | PRESS | TEMP | DEWPT | MR | THV* | DTHV/DZ | |
| (M) | (MB) | (DEG C) | (DEG C) | (CM/KG) | (DEG K) | (*1000) | |
| 0. | 869. | .6 | -5.4 | 2.9 | 285.5 | | |
| 175. | 850. | 2.6 | -12.4 | 1.7 | 289.2 | 21.1 | |
| 1210. | 748. | -5.5 | -17.5 | 1.3 | 291.1 | 1.8 | |
| 1711. | 700. | -9.9 | -15.9 | 1.6 | 291.8 | 1.5 | |
| 2102. | 665. | -13.3 | -18.3 | 1.4 | 292.3 | 1.1 | |
| 2815. | 605. | -19.9 | -26.9 | .7 | 292.5 | .4 | |
| 3231. | 572. | -22.9 | -37.9 | .2 | 293.7 | 2.7 | |
| 4203. | 500. | -31.5 | -61.5 | .0 | 294.6 | 1.0 | |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | |
|----------|----------|------------|-------|
| 31/03/77 | 05:00:00 | SLC | |
| HEIGHT | WIND DIR | WIND SPEED | DU/DZ |
| (M) | (DEG) | (MPS) | (*10) |
| C. | 100.0 | 3.1 | .000 |
| 175. | 110.0 | 3.1 | .014 |
| 542. | 140.0 | 3.6 | .033 |
| 947. | 170.0 | 4.5 | .053 |
| 1151. | 185.0 | 6.2 | .102 |
| 1456. | 190.0 | 9.3 | .059 |
| 1711. | 200.0 | 10.8 | .087 |
| 2066. | 205.0 | 13.9 | .052 |
| 2371. | 205.0 | 15.5 | .016 |
| 2980. | 215.0 | 16.5 | -.008 |
| 3590. | 210.0 | 16.0 | .051 |
| 4203. | 225.0 | 19.1 | |

| RADIOSONDE | | DATE | 31/03/77 | TIME | 17:00:00 | LOCATION | SLC |
|------------|-----|-------|----------|---------|----------|----------|---------|
| Z | (M) | PRESS | TEMP | DEWPT | MR | THV* | DTHV/DZ |
| | | (MB) | (DEG C) | (DEG C) | (GM/KG) | (DEG K) | (+1000) |
| C. | | 856. | 7.8 | -4.2 | 3.2 | 293.3 | |
| 85. | | 857. | 5.0 | -11.0 | 1.9 | 291.1 | -26.8 |
| 153. | | 850. | 4.6 | -10.4 | 2.0 | 291.3 | 4.2 |
| 1692. | | 700. | -10.3 | -10.8 | 2.4 | 291.5 | .1 |
| 2388. | | 638. | -16.3 | -16.3 | 1.7 | 292.4 | 1.3 |
| 2745. | | 508. | -19.3 | -27.9 | .6 | 292.1 | -8 |
| 2967. | | 590. | -20.9 | -25.9 | .8 | 293.5 | 6.3 |
| 3154. | | 575. | -22.1 | -52.1 | .1 | 294.1 | 3.4 |
| 4183. | | 500. | -29.9 | -59.9 | .0 | 296.6 | 2.4 |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | |
|----------|----------|------------|-------|
| 31/03/77 | 17:00:00 | SLC | |
| HEIGHT | WIND DIR | WIND SPEED | DU/CZ |
| (M) | (DEG) | (MPS) | (+10) |
| 0. | 360.0 | 4.6 | -.098 |
| 153. | 15.0 | 3.1 | .000 |
| 542. | 330.0 | 3.1 | .016 |
| 847. | 310.0 | 3.6 | .016 |
| 1151. | 285.0 | 4.1 | .069 |
| 1456. | 260.0 | 6.2 | .021 |
| 1692. | 260.0 | 6.7 | .060 |
| 2371. | 235.0 | 10.8 | .008 |
| 2980. | 240.0 | 11.3 | -.033 |
| 3590. | 240.0 | 9.3 | -.052 |
| 3995. | 240.0 | 7.7 | -.035 |
| 4183. | 250.0 | 6.7 | |

| RADIOCSNDE | DATE 01/04/77 | TIME 05:00:00 | LOCATION SLC | | | | |
|------------|---------------|-----------------|------------------|---------------|----------------|--------------------|--|
| Z (M) | PRESS (MB) | TEMP (DEG C) | DEWPT (DEG C) | MR (CM/KG) | THV (DEG K) | DTIV/DZ (*1000) | |
| 0. | 860. | 2.2 | -6.8 | 2.7 | 288.3 | | |
| 91. | 850. | 1.0 | -11.0 | 1.9 | 287.5 | -4.6 | |
| 153. | 843. | .6 | -12.4 | 1.7 | 287.3 | 3.4 | |
| 233. | 835. | 2.2 | -11.8 | 1.8 | 290.3 | 33.2 | |
| 1080. | 749. | -4.9 | -14.9 | 1.6 | 291.7 | 1.7 | |
| 1627. | 700. | -10.7 | -15.4 | 1.6 | 290.9 | -1.3 | |
| 2481. | 625. | -18.3 | -18.3 | 1.4 | 291.3 | 1.0 | |
| 2984. | 584. | -20.5 | -20.5 | 1.3 | 294.9 | 6.2 | |
| 4123. | 500. | -28.5 | -30.0 | .6 | 298.4 | 7.1 | |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | | | | |
|---------------|-------------------|---------------------|----------------|--|--|--|
| 01/04/77 | 05:00:00 | SLC | | | | |
| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | DU/DZ (*10) | | | |
| 0. | 130.0 | 3.6 | | | | |
| 91. | 150.0 | 4.6 | .110 | | | |
| 238. | 185.0 | 5.7 | .075 | | | |
| 542. | 235.0 | 5.2 | -.016 | | | |
| 847. | 250.0 | 5.7 | .018 | | | |
| 1151. | 250.0 | 6.7 | .033 | | | |
| 1456. | 255.0 | 6.7 | .000 | | | |
| 1627. | 255.0 | 6.7 | .000 | | | |
| 2371. | 245.0 | 8.8 | .028 | | | |
| 2980. | 260.0 | 9.3 | .008 | | | |
| 3283. | 270.0 | 9.8 | .017 | | | |
| 3590. | 270.0 | 9.3 | -.016 | | | |
| 4123. | 265.0 | 7.7 | -.030 | | | |

| RADIOSONDE | DATE 01/04/77 | TIME 17:00:00 | LOCATION SLC | | | | |
|------------|---------------|---------------|--------------|---------|---------|---------|--|
| Z | PRESS | TEMP | DWPT | MR | THV* | DTFV/DZ | |
| (M) | (MB) | (DEC C) | (DEC C) | (GM/KG) | (DEC K) | (*1000) | |
| 0. | 860. | 1.6 | .0 | 4.4 | 287.5 | | |
| 93. | 850. | -1.1 | -1.6 | 4.0 | 285.7 | -21.0 | |
| 800. | 778. | -4.5 | -6.5 | 3.0 | 289.2 | 4.9 | |
| 1618. | 700. | -10.7 | -12.6 | 2.1 | 291.0 | 2.2 | |
| 3039. | 583. | -20.3 | -22.7 | 1.1 | 295.2 | 7.0 | |
| 4113. | 500. | -29.7 | -33.6 | .4 | 296.9 | 1.6 | |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | | | | |
|----------|----------|------------|-------|--|--|--|
| 01/04/77 | 17:00:00 | SLC | | | | |
| HEIGHT | WIND DIR | WIND SPEED | DU/DZ | | | |
| (M) | (DEC) | (MPS) | (*10) | | | |
| 0. | 240.0 | 3.1 | | | | |
| 93. | 265.0 | 2.6 | -.054 | | | |
| 542. | 345.0 | 2.5 | .000 | | | |
| 847. | 335.0 | 2.6 | .000 | | | |
| 1151. | 330.0 | 3.1 | .016 | | | |
| 1456. | 335.0 | 3.1 | .000 | | | |
| 1618. | 330.0 | 3.1 | .000 | | | |
| 2371. | 295.0 | 4.1 | .013 | | | |
| 2980. | 275.0 | 6.2 | .034 | | | |
| 3590. | 295.0 | 6.2 | .000 | | | |
| 3835. | 295.0 | 6.2 | .000 | | | |
| 4113. | 295.0 | 6.2 | .000 | | | |

RADIOSONDE DATE 04/04/77 TIME 05:00:00 LOCATION SLC

| Z (M) | PRESS (MB) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTM/DZ (*1000) |
|----------|---------------|-----------------|------------------|---------------|-----------------|-------------------|
| 0. | 876. | .6 | -4.4 | 3.1 | 284.9 | 35.0 |
| 55. | 870. | 2.0 | -7.0 | 2.6 | 286.8 | 17.5 |
| 245. | 850. | 1.0 | 9.4 | 8.8 | 289.4 | 5.4 |
| 722. | 800. | .4 | -11.6 | 2.0 | 291.9 | 1.4 |
| 1685. | 706. | -8.1 | -8.4 | 2.9 | 293.3 | 15.6 |
| 1785. | 700. | -7.3 | -9.8 | 2.6 | 294.9 | 10.6 |
| 1906. | 689. | -7.3 | -11.6 | 2.3 | 296.2 | 5.7 |
| 2442. | 642. | -9.5 | -13.9 | 2.0 | 299.2 | 16.0 |
| 2535. | 634. | -9.5 | -15.5 | 1.8 | 300.7 | 5.3 |
| 3006. | 595. | -12.1 | -15.7 | 1.9 | 303.2 | 6.4 |
| 4363. | 500. | -17.5 | -28.5 | .7 | 311.9 | |

* VIRTUAL POTENTIAL TEMPERATURE

DATE 04/04/77 TIME 05:00:00 PLACE SLC

| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | DU/DZ (*10) |
|---------------|-------------------|---------------------|----------------|
| 0. | 165.0 | 4.1 | |
| 245. | 160.0 | 3.6 | -.020 |
| 542. | 200.0 | 2.1 | -.051 |
| 847. | 230.0 | 2.6 | .016 |
| 1151. | 305.0 | 4.6 | .066 |
| 1456. | 315.0 | 6.2 | .052 |
| 1785. | 325.0 | 8.2 | .061 |
| 2371. | 325.0 | 10.3 | .036 |
| 2980. | 5.0 | 11.3 | .016 |
| 3590. | 355.0 | 18.5 | .118 |
| 4363. | 355.0 | 27.3 | .114 |

| RADIOCSNDE | DATE 04/04/77 | TIME 17:00:00 | LOCATION SLC | | | | |
|------------|---------------|---------------|--------------|---------|---------|---------|------|
| Z | PRESS | TEMP | DEWPT | WS | THV* | CTPV/DZ | |
| (M) | (MB) | (DEG C) | (DEG C) | (GM/KG) | (DEG K) | (*1000) | |
| 0. | 977. | 12.8 | -2.2 | 3.7 | 297.6 | | |
| 262. | 850. | 9.6 | -4.4 | 2.2 | 295.7 | | -6.9 |
| 1828. | 700. | -5.1 | -10.1 | 2.5 | 297.2 | | 1.0 |
| 2084. | 678. | -6.9 | -10.5 | 2.5 | 298.0 | | 2.8 |
| 3069. | 598. | -6.9 | -20.9 | 1.2 | 308.7 | | 10.3 |
| 4433. | 500. | -15.9 | -28.9 | .7 | 313.8 | | 7.8 |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | | | | |
|----------|----------|------------|-------|--|--|--------|
| 04/04/77 | 17:00:00 | SLC | | | | |
| HEIGHT | WIND DIR | WIND SPEED | DU/DZ | | | |
| (M) | (DEG) | (MPS) | (*10) | | | |
| 0. | 330.0 | 4.1 | | | | |
| 262. | 315.0 | 2.1 | | | | -0.038 |
| 542. | 340.0 | 2.1 | | | | -0.036 |
| 847. | 290.0 | 1.5 | | | | -0.020 |
| 1151. | 280.0 | 3.1 | | | | .053 |
| 1456. | 300.0 | 5.2 | | | | .069 |
| 1761. | 285.0 | 5.7 | | | | .016 |
| 1828. | 295.0 | 6.2 | | | | .075 |
| 2371. | 315.0 | 8.2 | | | | .037 |
| 2980. | 335.0 | 11.3 | | | | .051 |
| 3590. | 325.0 | 15.5 | | | | .069 |
| 4433. | 325.0 | 14.4 | | | | -0.013 |

| RADIOSONDE | DATE 05/04/77 | TIME 05:00:00 | LOCATION SLO | | | | |
|------------|---------------|---------------|--------------|---------|---------|---------|--|
| Z | PRESS | TEMP | DEWPT | MR | YHV* | STPV/DZ | |
| (M) | (MB) | (DEG C) | (DEG C) | (CM/KG) | (DEG K) | (*1000) | |
| 0. | 877. | 6.6 | -4 | 4.2 | 291.2 | | |
| 93. | 867. | 7.4 | -3.6 | 3.4 | 292.9 | 17.6 | |
| 259. | 850. | 7.2 | -5.0 | 3.1 | 294.0 | 7.2 | |
| 413. | 834. | 7.0 | -6.0 | 2.9 | 295.6 | 10.2 | |
| 1826. | 700. | -4.1 | -7.3 | 3.2 | 298.5 | 2.1 | |
| 2240. | 664. | -7.1 | -8.4 | 3.1 | 299.7 | 2.8 | |
| 2563. | 637. | -9.9 | -13.0 | 2.2 | 301.0 | 4.2 | |
| 3221. | 585. | -15.5 | -15.5 | 1.9 | 300.7 | -5 | |
| 3326. | 577. | -15.5 | -16.0 | 1.9 | 301.9 | 11.2 | |
| 3352. | 575. | -15.1 | -20.1 | 1.3 | 302.6 | 25.3 | |
| 3484. | 555. | -12.9 | -27.9 | .7 | 306.5 | 30.2 | |
| 4403. | 500. | -18.5 | -28.5 | .7 | 310.6 | 4.4 | |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | | | | |
|----------|----------|------------|-------|--|--|--|
| 05/04/77 | 05:00:00 | SLO | | | | |
| HEIGHT | WIND DIR | WIND SPEED | DU/DZ | | | |
| (M) | (DEG) | (MPS) | (*10) | | | |
| 0. | 130.0 | 3.6 | | | | |
| 259. | 140.0 | 3.1 | -0.19 | | | |
| 542. | 35.0 | 1.1 | -0.74 | | | |
| 847. | 310.0 | 3.6 | .085 | | | |
| 1151. | 325.0 | 3.6 | .000 | | | |
| 1456. | 355.0 | 4.1 | .016 | | | |
| 1761. | 350.0 | 5.7 | .052 | | | |
| 1826. | 350.0 | 6.7 | .154 | | | |
| 2371. | 355.0 | 9.8 | .057 | | | |
| 2980. | 355.0 | 11.8 | .033 | | | |
| 3590. | 340.0 | 12.4 | .010 | | | |
| 4403. | 350.0 | 12.4 | .000 | | | |

| RADIOSONDE | DATE 05/04/77 | TIME 17:00:00 | LOCATION SLC | | | | | |
|------------|---------------|-----------------|------------------|---------------|-----------------|--------------------|--|--|
| Z (M) | PRESS (MB) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | DTMV/DZ (*1000) | | |
| 0. | 877. | 17.8 | -2 | 4.3 | 302.9 | -40.3 | | |
| 77. | 869. | 14.2 | -2.8 | 3.6 | 299.8 | 2.2 | | |
| 263. | 850. | 12.8 | -3.2 | 3.5 | 300.2 | .2 | | |
| 1854. | 700. | -2.1 | -12.1 | 2.2 | 300.6 | .5 | | |
| 2117. | 677. | -4.5 | -14.5 | 1.8 | 300.7 | 19.5 | | |
| 2185. | 671. | -3.9 | -18.9 | 1.3 | 302.0 | 15.0 | | |
| 2458. | 648. | -4.1 | -23.1 | .9 | 304.8 | 3.3 | | |
| 3653. | 555. | -12.3 | -42.3 | .2 | 308.7 | 1.9 | | |
| 4453. | 500. | -18.7 | -48.7 | .1 | 310.3 | | | |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | | | |
|---------------|-------------------|---------------------|----------------|--|--|
| 05/04/77 | 17:00:00 | SLC | | | |
| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | CU/DZ (*10) | | |
| 0. | 360.0 | 3.6 | .000 | | |
| 269. | 340.0 | 3.6 | -.018 | | |
| 542. | 330.0 | 3.1 | -.033 | | |
| 847. | 295.0 | 2.1 | .016 | | |
| 1151. | 275.0 | 2.6 | .000 | | |
| 1456. | 260.0 | 2.6 | .038 | | |
| 1854. | 240.0 | 4.1 | -.039 | | |
| 2371. | 330.0 | 2.1 | .016 | | |
| 2980. | 15.0 | 3.1 | .051 | | |
| 3590. | 10.0 | 6.2 | .000 | | |
| 4453. | 10.0 | 6.2 | | | |

RADIOSONDE DATE 06/04/77 TIME 05:00:00 LOCATION SLC

| Z (M) | PRESS (MB) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | THV* (DEG K) | CTHV/DZ (*1000) |
|----------|---------------|-----------------|------------------|---------------|-----------------|--------------------|
| 0. | 878. | 4.4 | -0.6 | 4.2 | 288.8 | |
| 66. | 871. | 9.8 | -1.2 | 4.0 | 295.1 | 54.6 |
| 273. | 850. | 9.8 | -4.2 | 3.3 | 296.0 | 4.3 |
| 764. | 800. | 7.2 | -4.8 | 3.3 | 299.4 | 7.1 |
| 1622. | 719. | -0.1 | -12.1 | 2.1 | 300.5 | 1.2 |
| 1854. | 700. | -0.9 | -14.9 | 1.7 | 301.8 | 5.8 |
| 2060. | 682. | -1.7 | -31.7 | .4 | 302.9 | 7.4 |
| 2593. | 637. | -3.9 | -33.9 | .3 | 306.4 | 0.5 |
| 4463. | 500. | -19.3 | -43.3 | .1 | 309.5 | 1.7 |

* VIRTUAL POTENTIAL TEMPERATURE

D-70

DATE 06/04/77 TIME 05:00:00 PLACE SLC

| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | DU/DZ (*10) |
|---------------|-------------------|---------------------|----------------|
| 0. | 130.0 | 4.1 | |
| 273. | 165.0 | 3.6 | -0.018 |
| 542. | 170.0 | 4.1 | .019 |
| 847. | 185.0 | 4.6 | .016 |
| 1151. | 200.0 | 3.1 | -0.049 |
| 1456. | 240.0 | 1.5 | -0.052 |
| 1854. | 320.0 | 3.6 | .053 |
| 2371. | 265.0 | 3.1 | -0.010 |
| 2980. | 250.0 | 1.5 | -0.026 |
| 3590. | 265.0 | 2.6 | .018 |
| 4463. | 250.0 | 5.2 | .030 |

| RADIOSONDE | DATE | 06/04/77 | TIME | 17:00:00 | LOCATION | SLC |
|------------|---------------|-----------------|-----------------|---------------|-----------------|--------------------|
| Z (M) | PRESS (MB) | TEMP (DEG C) | DWPT (DEG C) | HR (CM/KG) | THV* (DEG K) | STHV/DZ (*1000) |
| 0. | 877. | 21.6 | -1.4 | 3.9 | 306.9 | -29.6 |
| 97. | 867. | 18.0 | -4.0 | 3.3 | 303.9 | -0.1 |
| 272. | 850. | 16.4 | -5.6 | 3.0 | 303.9 | -0.0 |
| 1878. | 700. | .8 | -10.2 | 2.5 | 303.8 | 1.1 |
| 2850. | 620. | -7.5 | -17.5 | 1.6 | 304.9 | 1.8 |
| 3161. | 596. | -9.9 | -23.9 | .9 | 305.4 | 18.3 |
| 3307. | 585. | -8.9 | -38.9 | .2 | 308.1 | 1.6 |
| 4483. | 500. | -18.9 | -48.9 | .1 | 310.0 | |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | |
|---------------|-------------------|---------------------|----------------|
| 06/04/77 | 17:00:00 | SLC | |
| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | DU/DZ (*10) |
| C. | 350.0 | 3.1 | .018 |
| 272. | 355.0 | 3.6 | -.019 |
| 542. | 355.0 | 3.1 | -.016 |
| 847. | 345.0 | 2.6 | -.053 |
| 1151. | 310.0 | 1.0 | .036 |
| 1456. | 240.0 | 2.1 | .097 |
| 1878. | 255.0 | 6.2 | .027 |
| 2068. | 260.0 | 6.7 | .069 |
| 2371. | 255.0 | 8.8 | .000 |
| 2980. | 260.0 | 9.8 | -.077 |
| 3590. | 250.0 | 4.1 | .018 |
| 4487. | 265.0 | 5.7 | |

| RADIOSNDE | | DATE | TIME | TIME | LOCATION | SLC |
|-----------|-------|---------|---------|---------|----------|---------|
| Z | PRESS | TEMP | DEWPT | MR | THV* | DTW/DZ |
| (M) | (MB) | (DEG C) | (DEG C) | (GM/KG) | (DEG K) | (*1000) |
| 0. | 877. | 7.2 | -8 | 4.1 | 291.3 | |
| 48. | 872. | 8.4 | -4.5 | 3.1 | 293.4 | 32.4 |
| 115. | 865. | 12.6 | -4.4 | 3.2 | 298.4 | 75.3 |
| 266. | 850. | 12.4 | -5.6 | 3.0 | 299.7 | 8.3 |
| 390. | 837. | 13.2 | -6.0 | 2.9 | 301.6 | 15.7 |
| 754. | 800. | 10.8 | -8.2 | 2.6 | 303.1 | 4.2 |
| 1134. | 753. | 8.8 | -10.2 | 2.3 | 305.1 | 5.0 |
| 1871. | 700. | 2.2 | -13.8 | 1.9 | 305.3 | 3 |
| 2210. | 670. | -1.1 | -15.1 | 1.8 | 305.4 | 4 |
| 3290. | 583. | -10.5 | -14.6 | 2.1 | 306.9 | 1.4 |
| 4166. | 520. | -17.3 | -29.3 | .6 | 308.6 | 2.0 |
| 4473. | 500. | -19.7 | -33.7 | .4 | 309.1 | 1.7 |

| DATE | | TIME | PLACE | * VIRTUAL POTENTIAL TEMPERATURE | |
|----------|----------|------------|--------|---------------------------------|--|
| 07/04/77 | 05:00:00 | SLC | | | |
| HEIGHT | WIND DIR | WIND SPEED | DU/DZ | | |
| (M) | (DEG) | (MPS) | (*10) | | |
| 0. | 140.0 | 5.2 | | | |
| 266. | 125.0 | 3.1 | -0.079 | | |
| 542. | 155.0 | 2.6 | -0.018 | | |
| 847. | 180.0 | 4.1 | .049 | | |
| 1151. | 200.0 | 3.1 | -0.033 | | |
| 1456. | 220.0 | 2.6 | -0.016 | | |
| 1971. | 225.0 | 3.6 | .024 | | |
| 2371. | 245.0 | 5.2 | .032 | | |
| 2676. | 245.0 | 6.7 | .049 | | |
| 2980. | 250.0 | 7.7 | .033 | | |
| 3590. | 245.0 | 9.3 | .034 | | |
| 4473. | 225.0 | 5.7 | -0.046 | | |

| RADIOSONDE | | DATE 07/04/77 | TIME 17:00:00 | LOCATION SLC | | |
|------------|---------------|-----------------|------------------|---------------|-----------------|--------------------|
| Z (M) | PRESS (MB) | TEMP (DEG C) | DEWPT (DEG C) | MR (CM/KC) | THV* (DEG K) | DTMV/DZ (*1000) |
| 0. | 875. | 22.8 | -2.2 | 3.7 | 308.2 | |
| 255. | 850. | 19.3 | -4.3 | 3.3 | 306.7 | -5.3 |
| 1878. | 700. | 4.2 | -13.8 | 1.9 | 307.5 | .5 |
| 3200. | 595. | -8.1 | -21.1 | 1.2 | 307.7 | .2 |
| 4169. | 526. | -16.3 | -22.3 | 1.2 | 308.9 | 1.2 |
| 4417. | 509. | -19.1 | -30.1 | .6 | 309.5 | 2.5 |
| 4493. | 500. | -19.3 | -23.3 | .7 | 309.6 | 1.7 |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | | TIME | PLACE |
|---------------|-------------------|---------------------|----------------|
| 07/04/77 | | 17:00:00 | SLC |
| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | DU/DZ (*10) |
| 0. | 350.0 | 5.2 | -.063 |
| 255. | 340.0 | 4.6 | -.052 |
| 542. | 285.0 | 3.1 | .016 |
| 847. | 240.0 | 3.6 | .016 |
| 1151. | 230.0 | 4.1 | .036 |
| 1456. | 225.0 | 5.2 | .059 |
| 1878. | 220.0 | 7.7 | .032 |
| 2371. | 230.0 | 9.3 | .008 |
| 2980. | 245.0 | 9.9 | .016 |
| 3590. | 250.0 | 10.8 | .045 |
| 4493. | 265.0 | 14.3 | |

| RADIOSONDE | | DATE 03/04/77 | TIME 05:00:00 | LOCATION SLC | | |
|------------|---------------|-----------------|------------------|---------------|-----------------|--------------------|
| Z (M) | PRESS (MB) | TEMP (DEG C) | DEWPT (DEG C) | MR (GM/KG) | YHV* (DEG K) | DTHV/DZ (*1000) |
| 0. | 874. | 11.6 | -2.4 | 3.7 | 298.6 | |
| 233. | 950. | 14.8 | -5.2 | 3.1 | 302.2 | 23.5 |
| 390. | 835. | 16.0 | -6.0 | 2.9 | 305.0 | 18.4 |
| 1356. | 700. | 5.0 | -14.0 | 1.8 | 308.4 | 2.3 |
| 2623. | 636. | -2.1 | -16.1 | 1.7 | 308.8 | .6 |
| 3597. | 562. | -11.5 | -18.5 | 1.6 | 308.8 | .0 |
| 4306. | 512. | -18.9 | -19.2 | 1.6 | 308.2 | -.9 |
| 4473. | 500. | -18.3 | -32.3 | .5 | 310.8 | 15.7 |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | | TIME | PLACE | |
|---------------|-------------------|---------------------|----------------|--|
| 08/04/77 | | 05:00:00 | SLC | |
| HEIGHT (M) | WIND DIR (DEG) | WIND SPEED (MPS) | DU/DZ (*10) | |
| 0. | 135.0 | 3.6 | | |
| 238. | 170.0 | 11.8 | .345 | |
| 239. | 165.0 | 10.8 | -10.000 | |
| 542. | 170.0 | 14.4 | .119 | |
| 847. | 175.0 | 12.9 | -.049 | |
| 1151. | 185.0 | 10.3 | -.036 | |
| 1456. | 230.0 | 9.8 | -.016 | |
| 1856. | 230.0 | 10.8 | .025 | |
| 2371. | 225.0 | 11.8 | .019 | |
| 2980. | 235.0 | 8.8 | -.049 | |
| 3590. | 235.0 | 7.2 | -.026 | |
| 4473. | 275.0 | 7.7 | .006 | |

| RADIOSOUND | DATE 06/04/77 | TIME 17:00:00 | LOCATION SLC | | | | |
|------------|---------------|---------------|--------------|---------|---------|---------|--|
| Z | PRESS | TEMP | DENST | MR | THV* | STPV/CZ | |
| (M) | (MB) | (DEG C) | (DEG C) | (GM/KG) | (DEG K) | (*1000) | |
| 0. | 858. | 26.6 | -10.4 | 2.0 | 312.5 | | |
| 188. | 850. | 23.8 | -6.2 | 2.8 | 311.6 | -4.8 | |
| 705. | 800. | 18.0 | -12.0 | 1.9 | 310.7 | -1.8 | |
| 1831. | 700. | 7.4 | -13.6 | 1.9 | 311.1 | .3 | |
| 3250. | 590. | -4.7 | -34.7 | .3 | 312.3 | .8 | |
| 3672. | 560. | -6.7 | -36.7 | .3 | 314.6 | +.5 | |
| 4543. | 500. | -14.9 | -30.9 | .6 | 315.0 | .5 | |

* VIRTUAL POTENTIAL TEMPERATURE

| DATE | TIME | PLACE | | | | |
|----------|----------|------------|-------|--|--|--|
| 08/04/77 | 17:00:00 | SLC | | | | |
| HEIGHT | WIND DIR | WIND SPEED | DU/CZ | | | |
| (M) | (DEG) | (MPS) | (*10) | | | |
| 0. | 160.0 | 9.2 | | | | |
| 198. | 160.0 | 11.8 | .131 | | | |
| 542. | 165.0 | 12.9 | .071 | | | |
| 847. | 165.0 | 13.4 | .016 | | | |
| 1151. | 175.0 | 13.4 | .000 | | | |
| 1456. | 180.0 | 13.9 | .016 | | | |
| 1831. | 190.0 | 13.9 | .000 | | | |
| 2371. | 200.0 | 14.4 | .009 | | | |
| 2980. | 210.0 | 16.5 | .034 | | | |
| 3590. | 220.0 | 16.5 | .000 | | | |
| 4199. | 230.0 | 17.5 | .016 | | | |
| 4483. | 230.0 | 19.1 | .056 | | | |

APPENDIX E

REFERENCES

1. Turner, Bruce D., "A Diffusion Model for an Urban Area," Journal of Applied Meteorology, Volume 3, page 83-91, 1964.
2. Panofsky, H.A. and B. Prasad, "Similarity Theories and Diffusion," Int. J. Air Wat. Poll., Volume 9, page 419-430, 1965.
3. Businger, Joost A., "Turbulent Transfer in the Atmosphere Surface Layer," Workshop on Micrometeorology, American Meteorological Society, page 67-100, 1973.
4. Panofsky, H.A., et al, The Characteristics of Turbulent Velocity Components in the Surface Layer Under Convective Conditions, Boundary Layer Meteorology, Volume II, No. 3, page 335, 1977.
5. U.S. Army Dugway Proving Ground, Dugway, Utah, A Statistical Method of Calculating Turbulence Values for the Pasquill Stability Categories, Albert W. Waldron, 1977.
6. Lettau, H.H. and Ben Davidson, Exploring the Atmosphere's First Mile, Volume II, Pergamon Press, 1957.
7. Air Force Cambridge Research Laboratories, Bedford, Massachusetts, Kansas 1968 Field Program Data Report, Yutaka Izumi, Editor, 1971.
8. Commonwealth Scientific and Industrial Research Organization, Australia, The Wangara Experiment: Boundary Layer Data, by R.H. Clarke, et al, 1971.
9. U.S. Army Electronics Command, Atmospheric Science Laboratory, White Sands Missile Range, New Mexico, Turbulence Measurements from a T-Array of Meteorological Sensors, Armendariz, Manuel, et al, 1971.
10. Air Force Cambridge Research Laboratories, Hanscom Air Force Base, Massachusetts, Minnesota 1973 Atmospheric Boundary Layer Experiment Data Report, 1976.
11. Lumley, J.L. and H.A. Panofsky, The Structure of Atmospheric Turbulence, Interscience Publishers, 1961.
12. Willis, G.E. and J.W. Deardorff, "A Laboratory Model of the Unstable Planetary Boundary Layer," Journal of the Atmospheric Sciences, Volume 31, page 1297-1307, 1974.
13. U.S. Army Materiel Development and Readiness Command, Arlington, VA., Handbook for Chemical Hazard Prediction, 1977.

APPENDIX F

DISTRIBUTION LIST

| | <u>Copies</u> |
|--|---------------|
| Director National Oceanic & Atmospheric Administration Environmental Research Laboratories Boulder, CO 80302 | 1 |
| Cooperative Institute for Research In Environmental Sciences (CIRES) ATTN: Dr. John C. Wyngaard University of Colorado Boulder, CO 80309 | 1 |
| Director, National Oceanic & Atmospheric Administration Technical Processes Branch, D823 Room 806, Libraries Division 8060 13th Street Silver Spring, MD 20910 | 1 |
| Director National Oceanic & Atmospheric Administration National Oceanographic Data Center, D722 Rockville, MD 20852 | 1 |
| NASA Scientific and Technical Information Facility ATTN: Acquisitions Branch (S-AK/DL) P. O. Box 33 College Park, MD 20740 | 1 |
| Environmental Protection Agency Division of Meteorology Research Triangle Park, NC 27711 | 2 |
| National Aeronautics and Space Administration Director of Meteorological Systems Office of Applications (FM) Washington, DC 20546 | 1 |
| Chief Environmental Data Service Atmospheric Sciences Library Grammax Building ATTN: D821 Silver Spring, MD 20910 | 1 |
| Commander U.S. Army White Sands Missile Range ATTN: STEWS-TE-ER Technical Library White Sands Missile Range, NM 88002 | 1 |

| | <u>Copies</u> |
|--|---------------|
| Director, Meteorology Department Pennsylvania State University University Station, PA 16802 | 1 |
| Air Resources Laboratory National Oceanic and Atmospheric Administration ATTN: C. R. Dickson Idaho Falls, Idaho 83401 | 1 |
| Air Force Geophysics Laboratory ATTN: Yutaka Izumi Hanscom AFB Bedford, MA 01731 | 3 |
| Director Defense Nuclear Agency ATTN: Tech Library Washington, D.C. 20305 | 1 |
| Head, Atmospheric Research Section National Science Foundation 1800 G. Street, NW Washington, D.C. 20550 | 1 |
| Commander U.S. Army Electronics Command ATTN: DRSEL-CT-S (Dr. Swingle) Fort Monmouth, NJ 07703 | 1 |
| Wave Propagation Laboratory ATTN: ERL/NOAA (Dr. Duane Haugen) Boulder, CO 80302 | 1 |
| National Center for Atmos Res NCAR Library PO Box 3000 Boulder, CO 80303 | 1 |
| Head, Rsch and Development Div (ESA-131) Meteorological Department Naval Weapons Engineering Support Act Washington, DC 20374 | 1 |
| HQDA (DAEN-RDM/Dr. De Percin) Forrestal Bldg Washington, DC 20314 | 2 |

| | <u>Copies</u> |
|--|---------------|
| Director Western Regional Headquarters National Weather Service P.O. Box 11188, Federal Building Salt Lake City, UT 84111 | 1 |
| Director U.S. Army Engineer Waterways Experiment Station ATTN: WES-FV Vicksburg, MS 39181 | 1 |
| Director National Sciences Foundation Atmospheric Sciences Programs Washington, DC 20550 | 1 |
| Meteorology Department University of Utah Salt Lake City, UT 84116 | 1 |
| U.S. Department of Agriculture Forest Service Pacific Southwest Forest and Land Experiment Station ATTN: Mr. Jerry R. Reid 1960 Addison Street, P.O. Box 245 Berkeley, CA 94701 | 1 |
| The Research Corporation of New England ATTN: Mr. Donald L. Shearer 125 Silas Deane Highway Wethersfield, CT 06109 | 1 |
| Battelle Northwest Laboratories ATTN: Dr. Larry L. Wendell Bldg 622R, 200 West Area Richland, WA 99352 | 1 |
| Administrator Defense Documentation Center Cameron Station Alexandria, VA 22314 | 12 |
| H. E. Cramer Co, Inc P.O. Box 8049 Salt Lake City, Utah 84108 | 1 |

| | <u>Copies</u> |
|---|---------------|
| Commander US Army Test and Evaluation Command ATTN: AMSTE-TO-0 (Mr. Robert Gibson) Aberdeen Proving Ground, MD 21005 | 1 |
| Technical Support Directorate ATTN: Technical Library Bldg 3330, Edgewood Arsenal MD 21010 | 1 |
| Illinois State Water Survey Urbana, IL 61801 | 1 |
| Los Alamos Scientific Laboratory University of California Los Alamos, NM 87544 | 1 |
| Systems Applications, Inc. ATTN: Dr. Robert G. Lamb San Rafael, CA 97902 | 1 |
| Atmospheric Turbulence and Diffusion Laboratory ATTN: NOAA (Mr. Steven R. Hanna) Oak Ridge, TN 37830 | 1 |
| Tennessee Valley Authority Air-Quality Branch ATTN: Mr. Jack Leavitt Muscle Shoals, AL 35660 | 1 |
| Department of Meteorology University of Wisconsin Milwaukee, WI 53201 | 1 |
| Brookhaven National Laboratories Upton, NY 11973 | 1 |
| Lawrence Livermore Laboratory Livermore, CA 94550 | 1 |
| The Library of Congress ATTN: Exchange & Gift Div Washington, DC 20540 | 2 |
| NOAA Weather Service Nuclear Spt Ofc ATTN: Mr. R. W. Titus P. O. Box 14985 Las Vegas, NV 89114 | 1 |

| | <u>Copies</u> |
|---|---------------|
| SAMTEC - WE ATTN: Mr. R. W. Lenhard Vandenberg AFB, CA 93437 | 1 |
| Department of Atmospheric Science University of Washington Seattle, WA 98195 | 1 |
| Commander U.S. Air Force Environmental Technical Applications Center Scott Air Force Base, IL 62225 | 1 |
| RACIC, Battelle Memorial Institute Columbus Laboratories 505 King Avenue Columbus, OH 43201 | 1 |
| Commander U.S. Army Dugway Proving Ground Dugway, UT 84022 | |
| STEDP-SC | 1 |
| STEDP-MT-DA-M | 5 |
| STEDP-MT-DA-L | 1 |
| STEDP-MT-DA | 2 |